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PHLEBOTOMUS (PAPPATACI OR SANDFLY) FEVER

A DISEASE OF MILITARY IMPORTANCE

SUMMARY OF EXISTING KNOWLEDGE AND PRELIMINARY REPORT OF ORIGINAL INVESTIGATIONS

MAJOR ALBERT B. SABIN
MEDICAL CORPS, ARMY OF THE UNITED STATES

LIEUTENANT COLONEL CORNELIUS B. PHILIP
SANITARY CORPS, ARMY OF THE UNITED STATES

AND

JOHN R. PAUL, M.D.
NEW HAVEN, CONN.

Phlebotomus fever, also commonly called pappataci or sandfly fever, is a specific febrile disease of virus etiology which is of considerable military importance because of its occurrence in many parts of the world where troops are stationed. The adult native populations are for the most part immune, but when troops or other people from areas where the disease is not prevalent move into endemic zones they succumb in large numbers. While the disease is self limited and there are no fatalities, its military importance lies in the fact that it can incapacitate large numbers of men for periods of seven to fourteen days or longer at a time when their services may be needed most. The clinical picture of Phlebotomus fever resembles that of influenza but without the signs of acute inflammation of the respiratory tract which commonly accompany the latter disease. It is characterized by fever ranging from 100 to 105 F., severe headache, pain in the eyes, photophobia, subjective stiffness of the neck, pain in the back, muscles, bones and joints, associated on occasions with anorexia, nausea and vomiting, abdominal distress, and constipation or diarrhea. The fever usually lasts only about three days, although it may be shorter or longer, but convalescence is sometimes slow, weakness, dizziness, diarrhea and depression continuing for another ten days or longer, depending on the individual and the climate. In 1908 an Austrian military commission consisting of Doerr, Franz and Taussig [1] reproduced the disease in human beings by inoculation of blood obtained from patients on the first day of the fever and established the fact that the agent was filtrable and that the midges known as Phlebotomus papatasi [2] were vectors of the disease.

Phlebotomus fever appears to persist chiefly, although not exclusively, in the lowlands of those subtropical and tropical countries in which there are long periods of hot, dry weather. The disease is distinctly seasonal, the highest incidence occurring between the months of April and October in different parts of the world, depending on the prevailing temperatures and the periods when the rainy season ceases and reappears. Its widespread geographic distribution, particularly in those parts of Europe, Africa and Asia which lie in the belt between 20 and 45 degrees north latitude, has become apparent from reports dating from the beginning of the nineteenth century [3] to the present day, in which the disease has been described under a variety of names including three day fever, Mediterranean dengue, summer influenza, summer fever, hundskrankheit, soldaten fieber, acclimatization fever, endemic or climatic gastroenteritis and chitral fever. The disease is definitely known to occur in Italy as far north as the Po valley, Sicily, along the Adriatic coast of Yugoslavia as far north as the Istrian peninsula, Greece, Malta, Crete, Cyprus, Egypt, Palestine, Syria, Iraq, Persia (Iran), Crimea and the Transcausian region, and the northwest and central provinces of India. There are also reports which would suggest that this disease may occur in China as far north as Peiping and Tientsin and as far south as Hongkong, in Burma along the coast of the Bay of Bengal, in Ceylon, in the Poona region of India, in Aden and along the adjacent Red Sea coast of Arabia, the Anglo-Egyptian Sudan, along the Mediterranean coast of Africa—particularly the eastern portion, Corsica, the Mediterranean coast of France, Gibraltar, and along the Atlantic coast of Portugal.[4] Reports of a similar disease in countries lying just north or south of the equator have come from Kenya [5] and the Tanganyika Territory in Africa [6] and from the region of Bolivar in South America.[7] The disease is not known to occur in the

These investigations were carried out under the Commission of Neurotropic Virus Diseases, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Division, Office of the Surgeon General, United States Army. Part of the work was carried out in the Commission's Laboratory in the Middle East and the remainder at the Children's Hospital Research Foundation and the Longview State Hospital, Cincinnati.

The number of American and British officers and men who assisted us in this work is too great to allow individual mention here. In particular, however, we wish to include Col. C. F. Sams, M. C., Col. D. W. Billick, M. C., Col. H. C. Van Vlack, M. C., Lieut. Col. B. L. Keyes, M. C., Lieut. Col. F. Sewell, M. C., Lieut. Col. T. G. Ward, M. C., and Major C. S. Byron, M. C., of the U. S. Army Forces in the Middle East, Lieut. Col. A. A. Carabelli, M. C., of the Persian Gulf Service Command, and Col. D. Franklin, M. C., Lieutenant Colonel Norton and Major S. C. Wagoner, M. C., of the Seventh Army.

We are also indebted to Brig. Gen. G. X. Cheves, U. S. Army, for granting permission for us to carry out experiments designed to test the efficiency of insect repellents on American troops.

The following British officers also assisted us: Major C. R. Amies, R. A. M. C., Lieut. Col. J. B. Scott, R. A. M. C., and Lieutenant Colonel Elliot and Major E. D. Cooper of the South African Medical Corps.

1. Doerr, R.; Franz, K., and Taussig, S.: Das Pappatacifieber, Leipzig, Franz Deuticke, 1909.
2. The term "papatasi" is used to designate the vector in accord with Scopoli's original spelling, while "pappataci" was the name given to the disease by the Austrian commission because it was the popular name for these insects.
3. Birt, C.: Phlebotomus Fever and Dengue, Tr. Soc. Trop. Med. & Hyg. **6**: 243, 1913.
4. Megaw, J. W. D., and Gupta, J. C.: The Geographical Distribution of Some of the Diseases of India, Indian M. Gaz. **62**: 299, 1927. Yang, F. H.: Zur Kenntnis der Phlebotomen-Arten in China und zur Aetiologie des Phlebotomenfiebers, Far East A. Trop. Med., Tr. Ninth Cong. **1**: 495, 1934. Birt.[3]
5. Jewell, N. P., and Kauntze, W. H.: A Handbook of Tropical Fevers, London, Baillière, Tindall & Cox, 1932.
6. Manteufel: Ein bisher an der Deutsch-Ostafrikanischen Küste nicht bekanntes Sommerfieber, Arch. f. Schiffs- u. Tropen-Hyg. **16**: 619, 1912.
7. Cogollo Duque, J.: Bol. Ofic. san. pan-am. **14**: 1143, 1935, quoted from Van Rooyen, C. E., and Rhodes, A. J.: Virus Diseases of Man, Oxford Medical Publications, 1940, pp. 505-515.

United States. Phlebotomus fever was one of the diseases investigated by a commission of which we were the members, which went to North Africa early in 1943. Clinical and laboratory studies were carried out on human volunteers from the ranks of the American armed forces in the commission's laboratory in the Middle East, and subsequently on larger numbers of human beings in the United States.[8] Two strains of virus were isolated from the blood of patients—one strain from the Middle East and the other from Sicily. More than 100 cases of the experimental disease produced in human beings during the course of various experiments and tests have now been observed. Our purpose in the present communication is to report on the present status of our knowledge concerning the etiology, transmission, epidemiology, clinical manifestations, diagnosis, immunity and prophylaxis of Phlebotomus fever.

PROPERTIES OF THE ETIOLOGIC AGENT

The original studies of Doerr and his co-workers[9] (later confirmed by others[10]) established that the serum obtained during the first twenty-four hours of the fever, but not at forty hours or later, contained an agent which could reproduce the disease in human beings, even after filtration through filters which prevented the passage of ordinary bacteria. Moshkovsky and his associates[11] demonstrated that the virus may be present in the blood one to two days before the onset of fever. Although many unsuccessful attempts had been made to transmit the disease to the usual laboratory animals, such studies were not extensive and on occasion were equivocal.

Our own investigations yielded the following information:

1. Serum obtained from spontaneous cases occurring in troops in the Middle East and Sicily regularly reproduced the disease in human volunteers.

2. In the experimentally reproduced disease the virus was found in the blood at least twenty-four hours before the onset of fever and during the first twenty-four hours of the fever but was no longer demonstrable forty-eight hours after onset.

3. The virus has been passaged in series seven times by inoculation of serum from human being to human being without any apparent change in its properties.

4. By means of the intracutaneous or intravenous routes of inoculation, approximately 95 per cent of over 100 human adults were found to be susceptible regardless of sex or color.

5. Doses of virus (i. e. infected serum) which almost regularly produced the disease when inoculated intracutaneously or intravenously failed to produce the disease in 50 to 75 per cent of individuals in simultaneous tests when the inoculation was given subcutaneously or intramuscularly.

6. The largest amount of virus per cubic centimeter of serum obtained at the onset of fever was about 1,000 infective doses, but there is reason to believe that it may sometimes be less.

7. No virus was demonstrated in cerebrospinal fluid obtained on the first and second days of the experimentally reproduced disease even when large amounts (2 cc. intracutaneously and 15 cc. intravenously) of the cerebrospinal fluid were inoculated.

8. The virus was preserved for at least six months in the frozen state by storage at the low temperature produced by solid carbon dioxide or in the lyophilized state, stored in an ordinary refrigerator. Longer periods have not yet been tested.

9. Gradocol membrane filtration tests revealed that the virus is of small size. It passed with ease through all membranes having an average pore diameter of 200 millimicrons or more.[12] Passage through the 100 millimicron average pore diameter membrane is probable but questionable, since the filtrate did not reproduce the disease, although 2 of the 4 human subjects used in the test were immune to subsequent inoculation of active virus. Neither disease nor immunity followed the inoculation of filtrates from the 75 or 50 millimicron average pore diameter membranes. Applying Elford's formula to these data, one may say that the virus is certainly not larger than 40 to 60 millimicrons and quite probably not larger than 25 to 37 millimicrons. However, in view of the fact that the amount of virus in the serum used for filtration was only about 1,000 minimum lethal doses per cubic centimeter, it is not improbable that the true size of the Phlebotomus fever virus may be even smaller and perhaps fall in the same range of magnitude as that of yellow fever, which is 22 millimicrons.

10. The pathogenicity of the virus was tested by inoculation of serum or blood of proved infectivity for human beings by the intracerebral, intracutaneous, subcutaneous, intratesticular, intranasal or intraperitoneal routes in the following lower animals:

Young baboons (Papio hamadryas) and monkeys of the following species: grivet (Cercopithecus griseoviridis), vervet (Cercopithecus aethiops centralis), red African hussar (Cercopithecus [Erythrocebus] patas), Macaca radiata and Macaca mulatta (rhesus). The rodents included young white mice, wild gray mice, Syrian hamsters, Egyptian desert rats (jerboas), rabbits, guinea pigs and cotton rats.

No evidence of pathogenicity was obtained. The virus could not be demonstrated in the serum of 3 rhesus monkeys three and four days after inoculation, although the human beings in whom the tests were made developed transitory fever associated with serum sickness.

11. No evidence was found that the virus produced specific plaques on the chorioallantoic membrane of chick embryos,[13] nor did it appear that the embryos

8. The studies in the United States also formed part of a fever therapy program for patients with dementia paralytica at the Longview State Hospital, Cincinnati. The cooperation of Dr. Douglas Goldman, medical director, and Dr. E. A. Baber, superintendent, of the institution made this work possible.

9. Doerr, R., and Russ, V. K.: Weitere Untersuchungen über das Pappatacifieber, Arch. f. Schiffs- u. Tropen-Hyg. **13**: 693, 1909. Doerr, Franz and Taussig.[1]

10. Birt, C.: Phlebotomus Fever in Malta and Crete, J. Roy. Army M. Corps **14**: 236, 1910; **15**: 140, 1910. Tedeschi, A., and Napolitani, M.: Experimentelle Untersuchungen über die Aetiologie des "Sommerfiebers," Zentralbl. f. Bakt. (Abt. 1) **57**: 208, 1911. Shortt, H. E.; Poole, L. T., and Stephens, E. D.: Sandfly Fever on the Indian Frontier: A Preliminary Note on Some Laboratory Investigations, J. Roy. Army M. Corps **63**: 361, 1934; **64**: 17, 1935; Note on Some Experiments with Sandfly Fever Blood and Serum, Indian J. M. Research **23**: 279, 1935.

11. Moshkovsky, S. D., and others: Pappataci Fever, Med. Parasitol., Moscow **5**: 823, 1936.

12. Dr. Johannes Bauer of the International Health Division of the Rockefeller Foundation supplied most of the gradocol membranes used in these tests.

13. Shortt, H. E.; Rao, R. S., and Swaminath, C. S.: Cultivation of the Viruses of Sandfly Fever and Dengue Fever on the Chorioallantoic Membrane of the Chick Embryo, Indian J. M. Research **23**: 865, 1936. Shortt, H. E.; Pandit, C. G., and Rao, R. S.: The Virus of Sandfly Fever in Culture and Certain of Its Properties, ibid. **26**: 229, 1938. Demina, N. A., and Levitanskaja, P. B.: Studies on Pappataci Fever: X. Attempts to Cultivate the Virus on the Chorioallantois of Chick Embryo, Med. Parasitol., Moscow **9**: 272, 1940; abstr., Trop. Dis. Bull. **40**: 305, 1943. Demina, N. A.: Studies on Pappataci Fever: XI. Further Investigations on the Pappataci Virus in Culture, Med. Parasitol., Moscow **10**: 271, 1941; abstr., Trop. Dis. Bull. **40**: 305, 1943.

were adversely affected when the inoculations were made into the embryo, allantois or yolk sac. Subinoculation of the third and fourth passage chick embryo cultures (propagated by the same technic used in growing yellow fever virus for vaccine production) into human beings did not reproduce the disease.

CAPACITY OF VARIOUS BLOODSUCKING INSECTS TO TRANSMIT THE DISEASE

The capacity of Phlebotomus papatasi caught in endemic zones, with or without previous known exposure to an infected individual, to transmit the disease to susceptible human beings was established by Doerr [9] and extensively confirmed by others.[14] The evidence is suggestive, although not entirely satisfactory, that approximately one week is required for the virus to develop in these insects before they are capable of transmitting the disease after an infectious blood meal. The bedbug is the only other bloodsucking insect that had been tested (Doerr [1]) and it did not transmit the disease. Although other species of Phlebotomus, namely perniciosus, minutus, causasicus and others, have been found in areas where the disease has occurred, there is as yet no experimental proof as to whether or not they may be vectors of Phlebotomus fever. The work of this commission yielded the following results:

1. Phlebotomus papatasi caught in a region of Palestine where the disease had not occurred recently failed to produce the disease in 8 susceptible American volunteers who were bitten by large numbers of the insects.

2. The laboratory-reared offspring of these flies transmitted the infection from one group of human volunteers inoculated with serum virus to other susceptible volunteers, although not all who were bitten developed the disease.

3. A susceptible individual may be bitten many times by many flies which have previously fed on infected human beings at the proper time and yet not develop the disease. The susceptibility to the virus was proved when the volunteer developed the typical disease following inoculation with infectious serum.

4. Carefully controlled tests with mosquitoes (Culex pipiens and Aedes aegypti) and human fleas (Pulex irritans) showed that they were unable to transmit the disease. Some of these data are shown in figure 2. The tests made with Aedes aegypti were more extensive than any of the others and were carried out both in the Middle East and in the United States with both the Middle East and Sicilian strains of the virus; the negative results are of especial interest, since this mosquito is established as a vector of dengue.

CHARACTERISTICS OF THE VECTOR, PHLEBOTOMUS PAPATASI

The term "sandfly," which is popularly used for species of the genus Phlebotomus, is unfortunate because in North America it is also applied to totally different minute, biting insects, which are also known as "punkies" or "no-see-ums" and belong to the genus Culicoides.

Phlebotomus papatasi is a yellowish, two winged, hairy midge whose body is about 2 to 3 mm. long and somewhat less than 1 mm. thick (fig. 1). Only the female of the species bites and does so during the night and early hours of the morning. The body of the female appears distended and red for some hours after a blood meal, and black for several days thereafter. While the bite itself is usually painful, there is no reaction to it until and unless the person has developed an allergy to the secretions deposited during the bite. In persons not previously bitten by these insects there is neither pain nor local irritation after the initial stab. The bitten site may be marked by a pinpoint, reddish or hemorrhage spot or may be inconspicuous. However, about one to two weeks later (without exposure to other bites during the period) inflamed papules usually appear at practically all the sites of the original bites. These papules are 2 to 3 mm. in diameter, raised about 0.5 mm., pink or red, and not infrequently vesicular. Their appearance is not necessarily associated with itching, although moderate to severe itching is usually present later. These lesions are prominent for four

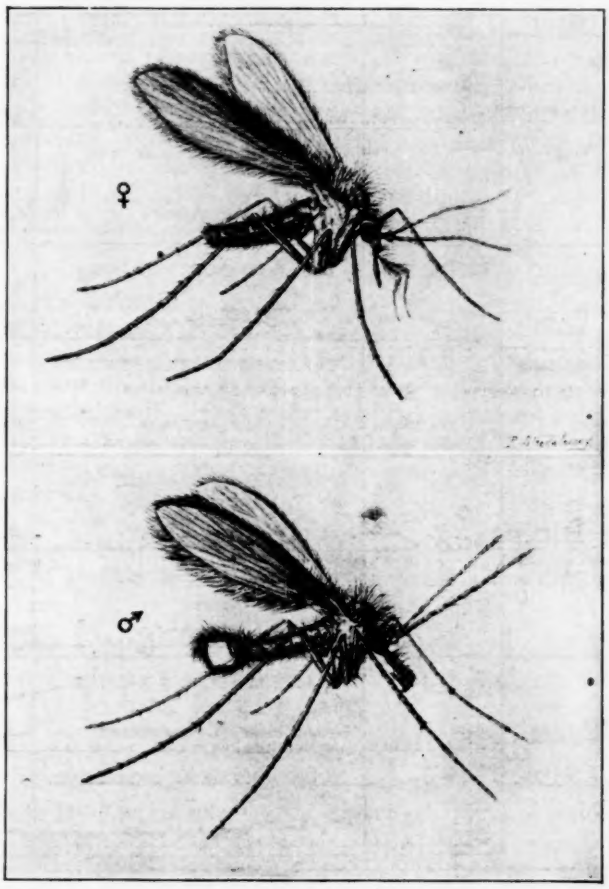


Fig. 1.—Phlebotomus papatasi.

to five days and then slowly disappear. Once sensitization is established such papules appear earlier after subsequent bites, and in certain hypersensitive persons there is an almost immediate urticarial reaction which may produce pronounced and extensive swelling of the eyelids or lips when these sites are bitten. Some persons, however, do not become sensitive.

These insects are most prevalent near the ground level, and only small numbers of them are encountered in upper stories. Their flight is characteristically in short, jerky hops along the walls and ceiling. They rarely bite people in motion or when there is a strong breeze. Because of their small size and capacity to penetrate small apertures, the ordinary screen and mosquito bar fail to keep them out. There is reason to believe that their range of flight is very short and that insects found in human habitations probably originate

14. Whittingham, H. E.: The Etiology of Phlebotomus Fever, J. State Med. 32: 461, 1924. Birt.[10] Shortt, Poole and Stephens.[10]

from breeding sites within a radius of about 50 yards;[15] there is some question, however, as to whether there may be exceptions to this rule. Phlebotomus papatasi is known to breed in rubble, dugouts, cracks in the earth, walls and embankments, garden soil and other dark protected spots containing moist organic matter. The flies are not, however, aquatic like mosquitoes, and too much moisture drowns the larvae. It has been observed that material for a possible breeding place is too damp if it adheres to the fingers and does not fall off when it is gently rubbed between them. It is apparent, therefore, that neither the sands of the desert nor the excessively moist areas of the tropics can be expected to provide suitable breeding grounds. The disturbance of ground incident to the establishment of certain military installations, such as occurs in the excavation of tent floors, the building of parapets and the erection of new buildings, can provide good potential breeding grounds. In warm weather approximately four and one-half to six weeks is required for the eggs to develop into adults. The life of the adult is believed to be relatively short in hot weather. In the laboratory it is not over two to three weeks.

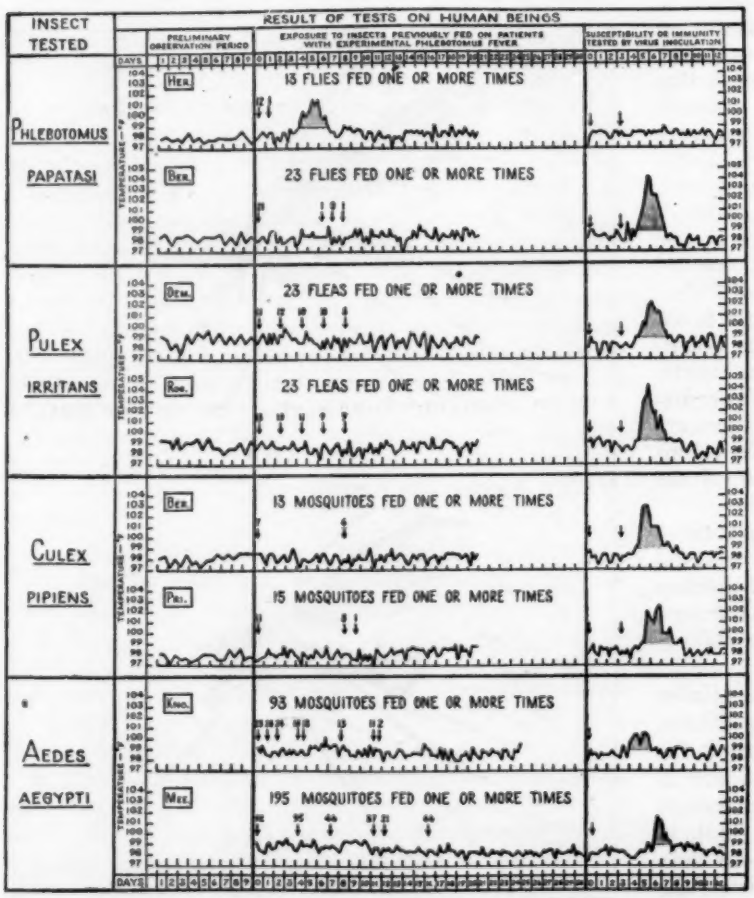

INSECT TESTED
RESULT OF TESTS ON HUMAN BEINGS
PRELIMINARY OBSERVATION PERIOD
EXPOSURE TO INSECTS PREVIOUSLY FED ON PATIENTS WITH EXPERIMENTAL PHLEBOTOMUS FEVER
SUSCEPTIBILITY OR IMMUNITY TESTED BY VIRUS INOCULATION
PHLEBOTOMUS PAPATASI
13 FLIES FED ONE OR MORE TIMES
23 FLIES FED ONE OR MORE TIMES
PULEX IRRITANS
23 FLEAS FED ONE OR MORE TIMES
23 FLEAS FED ONE OR MORE TIMES
CULEX PIPIENS
13 MOSQUITOES FED ONE OR MORE TIMES
15 MOSQUITOES FED ONE OR MORE TIMES
AEDES AEGYPTI
93 MOSQUITOES FED ONE OR MORE TIMES
195 MOSQUITOES FED ONE OR MORE TIMES
DAYS

Fig. 2.—Capacity of various blood sucking insects to transmit Phlebotomus fever.

CYCLE OF INFECTION AND RESERVOIR OF VIRUS

According to our present knowledge the disease is maintained in nature by passage from man to man through the medium of the intermediate host and vector, Phlebotomus papatasi. Secondary cases do not arise by contact in the absence of the vector. Although the disease is almost never seen among the native adolescent or adult population of endemic regions, it is obvious that practically all of them are attacked in infancy and early childhood. A good Italian description of the disease in infants and children[16] (recognized as such during an epidemic among adults) indicates that the disease differs in only minor details in the younger age groups, the incidence of diarrhea being especially high among them. While it is thus clear how new susceptible subjects become available each year for the perpetuation of the virus, it is not clear what the reservoir of the virus is during the late autumn and winter months when the Phlebotomus flies are absent. It is known that the virus quickly disappears from the blood of human beings, and there is as yet no evidence that it may be carried by lower animals for either long or short periods of time. Doerr[9] first suggested the possibility that the virus may be transmitted from one generation of infected Phlebotomus papatasi to another. Whittingham[14] was the first to demonstrate that Phlebotomus papatasi reared in the laboratory in a country where the disease is unknown (England) was capable of producing the disease in human volunteers without previously feeding on infected human beings. He believed, however, that the infection was not transmitted through the ova, but rather that the larvae acquired it by ingesting the dejecta or dead remains of their "parents." Moshkovsky and his collaborators,[17] starting with the ova from thousands of phlebotomi which had been fed on patients with the disease, proved in a series of experiments that certain of the adults raised from ova hatched away from their "parents" were capable of producing the typical disease in human volunteers. The nature of the disease they thus produced was further proved by serial passage of the virus in other human beings.

This question was investigated by this commission as follows:

(*a*) Phlebotomus papatasi larvae were allowed to ingest lyophilized virus (human serum), and the resulting adults were tested on human volunteers with negative results.

(*b*) Phlebotomus papatasi hatched out in the laboratory from ova derived from parent females of proved infectious capacity as late as eight to ten days after the infectious blood meal failed to produce the disease in human volunteers.

While these experiments were not extensive, they indicated that the virus is not passed on from generation to generation in all infected flies. Nevertheless, even if such an event should occur only occasionally, as suggested by Whittingham's[14] and Moshkovsky's[17] experiments, it may be enough to carry the virus over from one season to another. It is well to recognize, however, that this question cannot be regarded as having been settled.

(To be continued)

15. Marett, P. J.: The Bionomics of the Maltese Phlebotomi, Brit. M. J. **2**: 172, 1915. Whittingham, H. E., and Rook, A. F.: The Life History and Bionomics of Phlebotomus Papatasii, ibid. **2**: 1144, 1923. Young, T. C. McC.; Richmond, A. E., and Brendish, G. R.: Sandflies and Sandfly Fever in the Peshawar District, Indian J. Med. Research **13**: 961, 1925-1926.

16. Peschle, B.: Osservazione cliniche su un epidemia di febbre da papataci, Pediatria **44**: 41, 1936.

17. Moshkovsky, S. D., and others: Pappataci Fever: VIII. On the Presence of the Virus of Pappataci Fever in Phlebotomi Born from Eggs Laid by Infected Females, Med. Parasitol., Moscow **8**: 922, 1937.

STUDIES ON THE ACTION OF PENICILLIN

I. THE RAPIDITY OF ITS THERAPEUTIC EFFECT ON GONOCOCCIC URETHRITIS

C. PHILLIP MILLER, M.D.
WILLIAM WALLACE SCOTT, M.D.
AND
VELMA MOELLER, B.A.
CHICAGO

Although reports of the efficacy of penicillin in the treatment of gonorrhea [1] began to appear soon after the drug became available for clinical trial, not one of them has sufficiently emphasized the rapidity of its curative action. This point is brought out in the present study, which was undertaken as a part of an investigation into the mode of action of penicillin. Since infections of the male urethra lend themselves readily to bacteriologic and cytologic observations, gonococcic urethritis in the male is peculiarly suited to the study of the mode of action of a chemotherapeutic agent.

METHODS

The first 7 patients were hospitalized for treatment. Smears and cultures of urethral exudate were made on admission and before the first injection of penicillin.[2] Smears and cultures were made in duplicate. One of the smears was stained by Gram's method and examined at once, the other saved for later examination by special staining methods.

After the first 7 cases had demonstrated the rapidity of its action, we began to administer penicillin to ambulatory patients in the outpatient clinic, where they were kept under supervision during the period of treatment and observation. This practice proved to be equally successful in all particulars.

All patients, whether treated as inpatients or as outpatients, were examined by smear and culture at frequent intervals—every hour or two in most instances. Follow-up examinations were begun the following morning.

CULTURES

After the urethral orifice had been cleansed with 1:1,000 mercury bichloride and dried with sterile gauze, a drop of pus was accumulated by stripping the urethra and was taken up with a sterile cotton swab, small and tightly wound to prevent too much absorption. The swab was streaked at once across the middle of two agar plates which had been brought to the bedside or examining table. The inoculum on the second plate was spread out at once with the same swab, but the first plate was carried to the laboratory and spread with a sterile platinum loop. This precaution was taken in the interest of adequate separation of colonies and minimal contamination and was justified by occasional differences between the two cultures.

The medium employed was a meat-digest agar containing phosphate buffer and 1 per cent glucose. Defibrinated rabbit's blood was added at the time the plates were poured.

The plates were incubated in an atmosphere of carbon dioxide provided by a lighted candle in one of the metal cylinders customarily used for the sterilization and storage of Petri dishes.

After incubation overnight, colonies of gonococci were usually plainly visible, but the plates were returned to the incubator for another day and examined again. The bacteriologic diagnosis was based on morphology, staining reaction and sugar fermentation.

CLINICAL DATA

Twenty-one patients were treated in this study.[3] They varied in age from 21 to 49 years, with an average age of 30.3 years. Eight of the patients had had earlier infections. As they were selected to include early untreated initial attacks and chronic stubborn infections, the duration of the present disease varied from five days to four months; in 4 cases it was three months or longer. Three of the patients had received no treatment. Their infections were 5, 7 and 8 days old, respectively. All the other patients had been treated with one or another of the sulfonamide drugs, mostly sulfathiazole. Some of the obstinate cases had received a variety of sulfonamide preparations. Additional therapy in some cases included local instillations of silver preparations or potassium permanganate and artificially induced fever. Neither the duration of the infection nor the kind and duration of previous treatment seemed to make any difference in the response to penicillin.

Complications included acute prostatitis (case 5) and 2 cases of acute prostatitis and epididymitis (one of them, case 1) and 1 case of mild acute arthritis.

METHOD OF TREATMENT

Penicillin was administered by injection of 1 or 2 cc. quantities of aqueous solution into the gluteal muscles. The water used for its solution was sterile, pyrogen free water obtained from the operating room. The total dosage varied from 50,000 to 100,000 Oxford units. The size and spacing of the individual injections varied considerably. Table 1 gives some examples of this variation.

No symptoms or signs of toxic reactions were manifested in any of the patients.

RESULTS

With one exception, every infection was brought to an abrupt termination by the intramuscular administration of penicillin. Within two or three hours after the initiation of treatment and before the course of injections was complete, the urethral exudate underwent a striking change in character and quantity. It became paler, less viscous in consistency and much reduced in quantity. By the 5th or 6th hour it had practically disappeared. Stripping the urethra produced a small drop of clear watery secretion. The following morning no discharge was apparent, and none could be produced by stripping the urethra.

Coincident with the reduction and disappearance of these signs of infection came relief from any subjective symptoms such as local tenderness and pain on urina-

From the Departments of Medicine and Surgery and the A. B. Kuppenheimer Foundation of the University of Chicago.

1. Herrell, W. E.; Cook, E. N., and Thompson, L.: Use of Penicillin in Sulfonamide Resistant Gonorrheal Infections, J. A. M. A. **122**: 289-292 (May 29) 1943. Turner, F. B., and Sternberg, F. G.: Management of the Venereal Disease in the Army, ibid. **124**: 133-137 (Jan. 15) 1944. Dawson, M. H., and Hobby, G. L.: The Clinical Use of Penicillin: Observations in One Hundred Cases, ibid. **124**: 611-622 (March 4) 1944. Herrell, W. E.: The Clinical Use of Penicillin: An Antibacterial Agent of Biologic Origin, ibid. **124**: 622-627 (March 4) 1944. Bloomfield, A. L.; Rantz, L. A., and Kirby, M. M.: The Clinical Use of Penicillin, ibid. **124**: 627-633 (March 4) 1944. Mahoney, J. F.; Ferguson, C.; Buchholtz, M., and Van Slyke, C. J.: The Use of Penicillin Sodium in the Treatment of Sulfonamide Resistant Gonorrhea in Men: A Preliminary Report, Am. J. Syph., Gonor. & Ven. Dis. **27**: 525-528 (Sept.) 1943.

2. The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for experimental investigations recommended by the Committee on Chemotherapeutics and Other Agents of the National Research Council.

3. Drs. Russell D. Herrold, Frank M. Phifer and Harry C. Rolnick cooperated by referring some of these patients to the authors.

tion. In the 2 cases complicated by epididymitis, the pain and local tenderness disappeared within twenty-four hours, and the swelling subsided considerably in that time and disappeared altogether within one week.

The single exception noted was an especially severe acute hemorrhagic urethritis, which was scheduled to receive a larger course of treatment but in which by error only two doses of penicillin, a total of 60,000 units, was administered. The urethral discharge lessened in amount but never completely disappeared and increased again the next day. It responded, however, to a second course of penicillin (100,000 units) exactly like the other cases.

Cultures.—The time of disappearance of gonococci from the smears and cultures is shown in table 1, which contains illustrative examples of different doses and morphologic changes in appearance of both the leukocytes and the gonococci.

During the second and third hours after the beginning of treatment many of the leukocytes appeared swollen and filled with large vacuoles and their nuclei denser and more deeply stained. A large proportion of the gonococci at this time were swollen, irregular in shape, not uniformly stained, and surrounded by clear zones. These changes can be seen in the photomicrographs. Their significance is being investigated.

TABLE 1.—*Rate of Disappearance of Gonococci from the Anterior Urethra During Treatment with Penicillin Administered by Intramuscular Injection*

	Patients Allowed to Void Urine at Will											
	Case 1			Case 2			Case 3			Case 4		
Time in Hours	Units	Smear	Culture	Units	Smear	Culture	Units	Smear	Culture	Units	Smear	Culture
0	15,000	++++	+++	10,000	++++	++++	10,000	++++	++++	25,000	++++	++++
1	.....	—	+	10,000	++++	++++	10,000	+++	+++	25,000	+	++++
2	15,000	—	—	10,000	+++	+++	10,000	++	+	.....	+	+++
3	.....	—	—	.....	..	..	10,000	—	—	.....	±	—
4	15,000	—	—	.....	..	..	10,000	—	—	.....	—	—
5	.....	—	—	10,000	—	—	.....	..	..	.....	—	—
6	15,000	—	—	.....	..	..	.....	..	..	.....	—	—
7	.....	—	—	10,000	—	—	.....	..	..	.....	—	—
8	15,000	—	—	.....	..	..	.....	—	—	.....	—	—
Next day	.....	—	—	.....	—	—	.....	..	..	.....	..	..

In the tables, units = number of Oxford units of penicillin injected intramuscularly. Time of first injection is designated zero hour.
Smears: Number of gonococci per high power field, ++++ = more than 50, +++ = 25-50, ++ = 10-25, + = 1-10, ± = occasional, — = none found after careful search.
Cultures: ++++ = confluent growth of gonococci, +++ = more than 100 colonies, ++ = 10-100 colonies, + = less than 10 colonies, — = no colonies of gonococci.

TABLE 2.—*Rate of Disappearance of Gonococci from the Anterior Urethra During Treatment with Penicillin Administered by Intramuscular Injection*

	Urine Held During Drug Administration								
	Case 5			Case 6			Case 7		
Time in Hours	Units	Smear	Culture	Units	Smear	Culture	Units	Smear	Culture
0	30,000	++++	++++	30,000	++	++++	25,000	++	++
1	.....	++++	++++	.....	..	..	.....	+	++
2	.....	++	+++	30,000	±	++	25,000	—	+
3	.....	+	+++	.....	—	—	.....	—	—
4	30,000	—	+	.....	—	—	25,000	—	—
5	.....	—	—	.....	..	..	.....	—	—
6	.....	—	—	.....	..	..	25,000	—	—
7	.....	—	—	.....	..	..	.....	..	..
8	.....	—	—	.....	..	..	.....	..	..
Next day	.....	—	—	.....	—	—	.....	—	—

spacing of injections. The beginning of treatment is designated in each case as zero hour, and the times of subsequent procedures are given in terms of hours thereafter. The table also presents the results of the examination of smears and cultures made just before each injection of penicillin. The numbers of gonococci found in the smears and the number of gonococcus colonies developing in each culture are indicated by plus marks.

As shown by the results presented in table 2, the viable gonococci present in the urethra diminished rapidly and disappeared altogether in a very few hours. In fact, the interval between the onset of treatment and the first negative culture in all 15 cases averaged 3.7 hours, and the average length of time from the beginning of treatment to the first negative smear was 3.4 hours.

Cytologic Findings.—Examination of the smears which were made at the time of each culture confirmed the results of the latter and revealed some interesting

SEPARATION OF THE LOCAL AND SYSTEMIC ACTION OF PENICILLIN

Our interest in the mode of action of penicillin led us to question whether its therapeutic effect resulted from the penicillin brought to the tissues by the blood stream (systemic effect) or from the local gonococcidal action of the penicillin secreted in the urine and passed over the urethral mucosa during each micturition. As the 15 patients in the first series (represented by cases 1 to 4) had been allowed to void their urine at will, it was necessary to treat two additional groups of patients differently if we were to ascertain the relative importance of the two actions of penicillin, the systemic and the local. One group consisting of 2 patients was treated solely by urethral instillations of penicillin and the second group by intramuscular injections and the retention of urine during the period of therapeutic response.

THERAPEUTIC RESULTS WITH LOCAL INSTILLATIONS ALONE

The patients were allowed to void, and 4 cc. of penicillin solution was instilled into the anterior urethra and retained for five minutes. Every two hours in 1 case and every hour in the other, smears and cultures

were made of the urethral exudate and another instillation of 4 cc. was made. One patient received 1,000 units every two hours for five injections and the other 3,000 units every hour for seven instillations.

In the first of these 2 cases the smears and cultures became negative after the first injections but were strongly positive on the following morning. In the other case neither the cultures nor the smears became negative at any time.

These 2 cases seemed sufficient to demonstrate the inability of penicillin applied locally to eradicate gonococcic infection from the anterior urethra, and no more attempts were made. Both these patients were successfully treated by intramuscular injections on the following day. The first is case 6 in table 1.

THERAPEUTIC RESULT BY SYSTEMIC ACTION ALONE

The reciprocal experiment designed to eliminate the local action of the penicillin, which washes the surface of the urethral mucosa with each urination, was carried out on 7 patients. They received intramuscular injections, as did those in the first group, but retained their urine for the period of treatment and observation. To make this possible without discomfort they had been instructed to reduce their fluid intake to a minimum the preceding day. In all cases the urethral exudate underwent the same changes in character and disappeared as rapidly as in the cases in the first series, and the smears and cultures became negative at the same rate.

The data on 3 of the 7 patients in this series are presented in table 2. In all 7 the average lengths of time from the beginning of penicillin treatment to the first negative cultures and smear were 3.8 and 3.1 hours respectively. These results are almost identical with those obtained in the first group of cases and indicate that the therapeutic action of penicillin in gonococcic urethritis is systemic rather than a local; that is, it is due to the penicillin brought to the tissues by the blood stream rather than that which passes through the urethral canal in the urine.

RESULTS OF FOLLOW-UP EXAMINATIONS

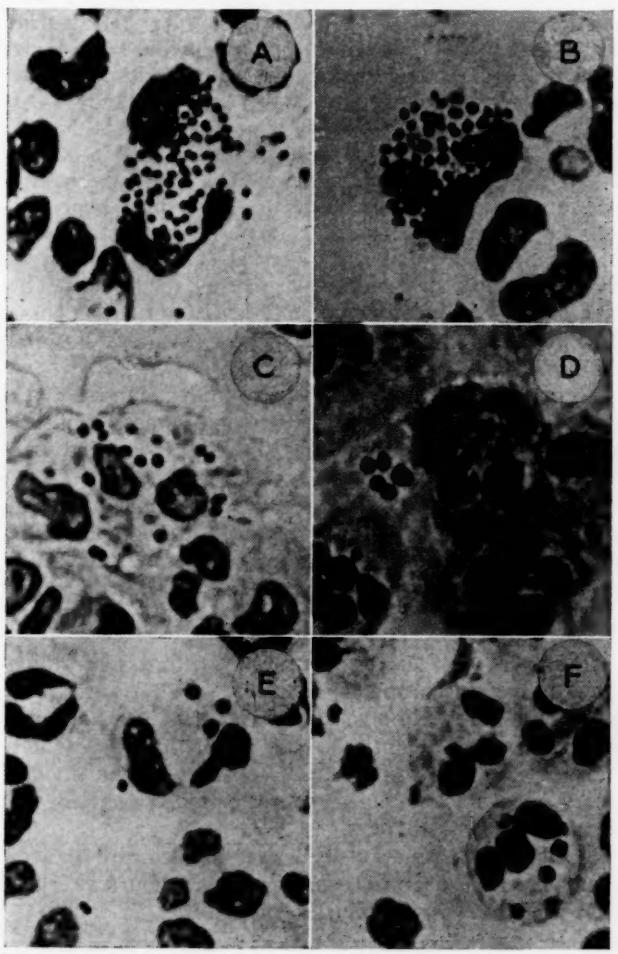
With 1 exception the patients were all followed by a systematic series of follow-up examinations, which began one week after treatment and included prostatic massage in 9 cases and provocative soundings in 2. Six patients were examined after bouts of excessive drinking. In no instance were gonococci found in cultures or smears after the examinations made during the period of treatment.

Two reinfections occurred. Both were regarded as such rather than relapses for the following reasons: One of them (case 1) occurred four months after treatment with penicillin, during which time the patient had been quite free from symptoms and had had four follow-up examinations, each including cultures, all of which were negative. He gave a definite history of exposure to account for his second infection. It was successfully treated with penicillin. Six follow-up cultures since then have all been negative.

The other occurred in case 9 a month after treatment with penicillin, during which time the patient had three follow-up examinations and cultures, all of which were negative, the last one a week before the exposure, which resulted in infection four days later. The reinfection responded promptly to penicillin.

COMMENT

Although only 21 cases were studied in this investigation, the results seem to be sufficiently striking to warrant presentation. The clinical signs and symptoms of urethritis subsided and disappeared with remarkable rapidity, in fact within two to five hours after beginning the administration of penicillin by intramuscular injection. At the same time the number of gonococci recovered by smear or culture from the urethral exudate diminished rapidly to the vanishing point. The interval between the onset of treatment and the first negative culture varied from one to six hours, with an average of 3¾ hours. The rate of disappearance was not



Microscopic appearance of smears stained by Gram's method: *A*, 0 hour (immediately before first injection of penicillin); *B*, 3d hour (after 1st injection of penicillin); *C*, 3d hour; *D*, 2d hour; *E*, 2d hour; *F*, 3d hour.

significantly slowed in those patients who retained their urine throughout the period of treatment, thereby eliminating the local action of penicillin on the urethral mucosa during urination. This finding, together with the failure of the local application of penicillin by instillation in 2 cases, indicated that penicillin is brought to the infected mucosa by the blood stream rather than from the lumen of the urethra.

The precise nature of the gonococcidal action of penicillin is not understood and lies outside the field of this investigation. The peculiar morphologic changes shown by gonococci in smears at the time their numbers were diminishing most rapidly are similar to those which can be produced in vitro by the action of penicillin

in liquid cultures. The large bizarre forms described by some authors working with other species of bacteria have been regarded as indicative of failure of cell division. Other morphologic changes observed in smears of the urethral exudate were the large clear zones surrounding the gonococci and the swollen, vacuolated appearance of the polymorphonuclear leukocytes.

Another finding worthy of note was the prompt disappearance of all evidence of inflammatory reaction which occurred almost simultaneously with the death of the infecting micro-organism and not after an appreciable lag period, as might have been expected. If this phenomenon had occurred only in chronic, sulfonamide resistant patients who had been infected for several months, an explanation might be sought in the possible activity of some humoral immune mechanism which had been brought into play. But the same thing occurred in 3 early cases of five, seven and eight days' duration respectively.

The amount of penicillin administered was 50,000 units in 3 cases, 60,000 units in 2, 75,000 in 2 and 100,000 in the remaining 14 cases. The only failure was an unusually severe infection in which, by error, only 60,000 units was administered. The size and spacing of the individual doses varied but in most cases did not extend over more than five or six hours. The treatment of ambulatory patients in the outpatient clinic was quite as satisfactory as the treatment of hospital patients.

Reports of previous investigators have suggested the necessity of spreading the treatments over periods of twenty-four to forty-eight hours, and some have advised administration by continuous intravenous injection.

Our findings do not indicate that such elaborate and prolonged treatment is necessary to accomplish the desired result, either in acute or in chronic gonorrhea with or without complications.

SUMMARY

Twenty-one cases of gonococcic urethritis including early acute and chronic sulfonamide resistant infections, some with complications, were treated by intramuscular injections of penicillin. The total amount of penicillin did not exceed 100,000 units. It was given in divided doses of various sizes over periods of various lengths, mostly five hours or less.

Frequent examination by smear and culture showed that gonococci disappeared within a few hours after the first injection of penicillin.

Rational Theory of Conception Among Greek Philosophers.—Empedocles (about 480 B. C.) was perhaps first among Greek philosophers to present a rational theory of conception. "The embryo," he states, "is born jointly from the male and female elements; development begins thirty-six days after conception, and on the forty-ninth day the embryo is completely formed. The resemblance of the child to the parent depends on the one who contributed most toward its formation." Hippocrates (460-377 B. C.) in his book "On Generation" confirms the theory that both parents play an equal part in the creation of the new being. The embryo is formed from the mixture of the seminal substances of both parents; the child, therefore, inherits the characteristics of both parents. It is impossible for it to resemble neither parent nor to inherit everything from the one parent and nothing from the other. If the resemblance to one parent is greater, it is to the one that contributed more substance to the seminal mixture. According to Hippocrates, in the parental seminal fluids are found the essences of all organs.—Gordon, Benjamin Lee: The Romance of Medicine, Philadelphia, F. A. Davis Company, 1944.

THE PRESENT STATUS OF THE TANNIC ACID METHOD IN THE TREATMENT OF BURNS

WALTER E. LEE, M.D.
AND
JONATHAN E. RHOADS, M.D.
PHILADELPHIA

[EDITORIAL NOTE.—This paper, together with the papers of Dr. Koch, Drs. Gurd and Gerrie and Dr. Davis, which follow it, concludes the symposium on "The Treatment of Burns." The papers of Drs. Harkins, Cope and Lam were published last week.]

Seldom in the history of surgical therapeusis has a new method entered an important field and swept all other methods into disuse as completely as did the tannic acid method in the treatment of burns in the decade following its introduction by Edward C. Davidson [1] of Detroit.

Now within a few years after the introduction of the sulfonamide drugs many of the old methods are back and the tannic acid method is disappearing from the field perhaps more rapidly than it entered it. It is worth while to review these changes, because we believe that their significance is probably basic and not determined solely by fashion.

Although many enthusiastic papers have been written about the tannic acid method and its variants, perhaps none sets forth its advantages better than the original presentation of Davidson. To understand Davidson's thinking on the subject of burns it is important to remember that in 1924 and 1925 the toxin theory of burn shock was nearing its zenith. The important experiments of Boyd and Robertson [2] had been reported in 1923, and the paper of Underhill and Kapsinow [3] contesting their results was not published until 1931.

While the New Haven theater fire was already a matter of history and Underhill's emphasis on the administration of fluids to burned patients was known to Davidson, the classic experiments of Blalock [4] and his associates on the plasma shift in burns, which did so much to establish the physical theory of burn shock, had not yet been reported.

Davidson's objective had been to find the means of precipitating denatured protein formed in the burned area and so to prevent or reduce the absorption of the toxic material which was thought to be responsible for the physiologic disturbances following burns. In systemic treatment he forced fluids both by mouth and by vein, reaching daily intakes of 10,000 cc. in some of his patients. His clinical results were good and impressed those who saw them. In addition to the precipitation of protein at the burned surface, he claimed for his method a reduction in the loss of fluid, electrolytes and plasma protein from the burn surface, the prevention of infection and decided relief of pain.

Critics of his method have based their attack until recently mainly on two points: first, that the tannic acid killed epithelium which might have survived, so

This paper, in a symposium on "The Treatment of Burns," is published under the auspices of the Section on Surgery, General and Abdominal.

1. Davidson, E. C.: Tannic Acid in the Treatment of Burns, Surg., Gynec. & Obst. **41**: 202, 1925.
2. Robertson, B., and Boyd, G. L.: The Toxemia of Severe Superficial Burns, J. Lab. & Clin. Med. **9**: 1, 1923.
3. Underhill, F. P., and Kapsinow, R.: The Alleged Toxin of Burned Skin, J. Lab. & Clin. Med. **16**: 823, 1931.
4. Blalock, A.: Experimental Shock: VII. The Importance of the Local Loss of Fluid in the Production of Low Blood Pressure After Burns, Arch. Surg. **22**: 610 (April) 1931.

that in some instances a second degree burn might be converted to a third degree burn,[5] and, second, that tanning was not only ineffective in preventing infection but prevented the early recognition of infection and interfered with drainage.[6]

The most recent criticism of tannic acid is the charge made by Wells, Humphrey and Coll [7] that it is hepatotoxic when injected. Owing to the fact that the changes in the liver have been regarded as important manifestations of burn toxemia as defined by Wilson, MacGregor and Stewart,[8] this suggests that tannic acid might intensify the pathologic disturbances observed after burns rather than diminish or prevent them.

COMMENT

Considerable evidence on the arguments for and against tannic acid has accumulated and the points which appear important to us are summarized. The arguments for the use of tannic acid are discussed first.

Tannic Acid Precipitates Burn Toxins.—The consensus is now that for the liver, at least, tannic acid does more harm than good. Toxemic deaths were not infrequent among patients treated with tannic acid, so that its continued use over the years has not been sustained by general acceptance of the idea that it prevented toxemia. Evidence of impaired liver function was obtained in burns of only moderate severity treated with tannic acid at the Pennsylvania Hospital.[9]

The Use of Tannic Acid to Prevent Infection.—Tannic acid is fairly satisfactory in preventing infection in second degree burns, but we have never seen a third degree burn treated with tannic acid that did not eventually develop some infection. Some infection about third degree burns is usual with other methods also, and it is possible that the bacterial action may be useful in separating the eschar. The difficulty with the tannic acid method is that infection tends to spread under the eschar and may thus spread from third degree areas to second degree areas. A. H. McIndoe [10] believes that in this manner some second degree areas may become third degree areas. Infection is particularly apt to occur if the eschar becomes cracked, as in the more mobile areas of the body such as the hands. This could be avoided partially by splinting, but splinting has not always been practiced in conjunction with tanning.

In our opinion the advantage of tannic acid in combating infection was that it often postponed infection for at least a week, so that the patient passed the period of shock and through much of the period of toxemia before infection supervened. The tanning method shares with Koch's [11] pressure dressing method the advantage that the primary dressing is not changed during the first ten days unless serious infection develops.

The Use of Tannic Acid to Reduce Plasma Loss.—The untanned patient with second degree areas oozes copious amounts of fluid from the burned surface. This is not suppressed completely with pressure dressings but may be stopped by rapid tanning. Analysis has shown that bleb fluid has a composition resembling that of plasma,[12] so that the oozing from burned surfaces probably represents a serious plasma loss. It seems clear, however, that the major plasma loss is interstitial, and it is uncertain whether it is advantageous to prevent the loss of plasma from the surface if it has already left the circulation. Conceivably such material might contain toxic elements, so that it would be preferable for it to escape rather than for it to remain in the interstitial spaces to be reabsorbed when the edema goes down. The plasma requirements of patients treated with petrolatum gauze and pressure dressings have been no higher, as far as they have been reported, than are the requirements of patients treated with tannic acid. Even if it could be shown that tanning did save some plasma, this would no longer be a deciding argument for or against its use because of the greater availability of plasma at the present time.

Relief of Pain.—The tannic acid method remains one of the most effective methods of relieving the pain of burns. It is not, however, the only satisfactory method, as petrolatum gauze, pressure dressings and splinting also give good results.

Tannic Acid Is Toxic for Epithelial Cells.—The belief that tannic acid damages cells is supported by the recent experiments of Cannon and Cope,[13] in which various materials were applied to donor areas from which calibrated thickness grafts had been cut. The time required for healing was substantially longer with tannic acid than with boric ointment dressings.

Tannic Acid Causes Liver Damage.—Wells's work has been confirmed by Hartmann and Romence [14] and by Baker and Handler.[15] However, it seems clear that tannic acid must be much less toxic under clinical conditions than when injected experimentally. In the experiments of Baker and Handler it was applied to areas denuded of skin and proved to be hepatotoxic. However, even here the conditions are somewhat different from those existing in a burn. It must be remembered that the typical second degree burn is not reproduced in the dog or in most of the common experimental animals, so that experiments which duplicate clinical conditions are difficult to devise. The experiments of Underhill, Kapsinow and Fisk [16] should also be recalled in this connection in which it was shown that absorption of both phenolsulfonphthalein and strychnine was greatly retarded in a burned area.

That all interference with liver function following burns is not dependent on tannic acid was indicated to us by observations on 2 patients treated with 2 per

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11. Koch, S. L., in Panel Discussions on Treatment of Burns, Bull. Am. Coll. Surgeons **27**: 106, 1942.
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14. Hartmann, F. W., and Romence, H. L.: Liver Necrosis in Burns, Ann. Surg. **118**: 402, 1943.
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16. Underhill, F. P.; Kapsinow, R., and Fisk, M. E.: Studies on Mechanism of Water Exchange in Animal Organisms: Composition of Edema Fluid Resulting from Superficial Burns, Am. J. Physiol. **95**: 315, 1930.

cent gentian violet, as reported by Wolff, Elkinton and Rhoads.[9] In these cases the bromsulphalein retention rose to over 15 per cent thirty minutes after injection, the van den Bergh reaction was slightly increased and the plasma prothrombin was decreased. The literature contains evidence from human autopsies that degenerative changes may occur in the liver without the use of any of the tanning agents, and Wilson, MacGregor and Stewart [8] describe a case in which clinical jaundice occurred in which only oil was applied locally. The association of actual liver necrosis with the use of tannic acid, however, is striking in the autopsy series of Erb, Morgan and Farmer.[17]

The possibility remained that tannic acid would not be harmful on small burns but that with burns of more than one third of the body surface enough absorption would take place to cause fatal liver damage. The fact that patients with burns of over one third of the body surface frequently die even when no tanning agent is used and when the circulation is maintained with plasma would lead one to conclude that, although tannic acid may have been absorbed from large burns in sufficient amounts to cause some liver damage, this was seldom more than a contributory cause of death.

In summary, therefore, our present knowledge indicates that the tannic acid treatment relieves pain well, helps prevent infection in second degree burns and perhaps delays the development of infection in the deeper burns until danger from shock and toxemia have passed. It does not prevent toxemia, and if it is absorbed in sufficient quantity it is capable of producing liver damage. On the other hand there is as yet no substantial evidence that it has increased the mortality of burns in man. It decreased the loss of plasma-like fluid from the surface of second degree burns, but there is no conclusive evidence that it has reduced the loss of plasma from the circulation into the tissues.

Numerous statistics in the literature [18] indicate that its use was followed by a decrease in mortality, and we believe that it has saved many lives. Now, however, that invasive infection is so well controlled by chemotherapeutic agents it seems likely that the tannic acid method will be superseded more and more by other methods, many of which are similar to the very methods it displaced before the days of the sulfonamides.

The ultimate place of the tannic acid method will probably be based not on animal experiments nor on plastic results but on human mortality experience. Analyzing the statistics compiled by Harkins,[19] one finds that without tannic acid the combined mortality for 1,369 cases was 26.7 per cent, whereas with tannic acid in a series of 1,660 cases it was 10.5 per cent. It is premature to state whether a further reduction in mortality is being made by the nontanning methods now in use.

1833 Pine Street.

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SURGICAL CLEANLINESS, COMPRESSION AND REST

AS PRIMARY SURGICAL PRINCIPLES IN THE TREATMENT OF BURNS

SUMNER L. KOCH, M.D.

CHICAGO

In spite of the twin spurs of war and civil disaster to the study of burns we are still far from a complete understanding of the changes in the body tissues, the body fluids and electrolytes that result from a severe burn. In the past few years, however, many workers in our own and other countries have made helpful contributions to the solution of this difficult problem and have made the entire medical profession increasingly aware of its importance. McClure [1] and his able associates at the Henry Ford Hospital—Hartman, Harkins, Lam and Romence; Reid,[2] Siler, Altmeier and their associates at the Cincinnati General Hospital; Churchill,[3] Cope, Lyons and Cannon at the Massachusetts General Hospital; Lund,[4] Levenson and Taylor at the Boston City Hospital; Drinker [5] and his associates at Harvard University; Dragstedt [6] and his co-workers at the University of Chicago; Rhoads,[7] Wolff, Elkinton and Lee in Philadelphia; Hirshfeld [8] at the Detroit Receiving Hospital; Neal Owens [9] at Tulane; Elman [10] at the St. Louis City Hospital; Evans [11] and his associates at the Medical College of

From the Department of Surgery, Northwestern University Medical School, and the Children's Surgical Service, Cook County Hospital.

This paper, in a symposium on "The Treatment of Burns," is published under the auspices of the Section on Surgery, General and Abdominal.

With Dr. Siler's consent I have used almost the identical title of his excellent paper published in Surgery, Gynecology and Obstetrics in August 1942.

1. McClure, R. D.: The Treatment of the Patient with Severe Burns, J. A. M. A. **113:** 1808-1812 (Nov. 11) 1939. Harkins, H. N.: The Treatment of Burns, Springfield, Ill., Charles C Thomas, Publisher, 1942. McClure, R. D., and Lam, C. R.: Problems in the Treatment of Burns: Liver Necrosis as a Lethal Factor, South. Surgeon **9:** 223-234 (April) 1940. McClure, R. D.; Hartman, F. W.; Schnedorf, J. G., and Schelling, V.: Anoxia: A Source of Possible Complications in Surgical Anesthesia, Ann. Surg. **110:** 835-850 (Nov.) 1939.

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3. Faxon, N. W., and Churchill, E. D.: The Cocoanut Grove Disaster in Boston: A Preliminary Account, J. A. M. A. **120:** 1385-1388 (Dec. 26) 1942. Cope, O.: The Treatment of the Surface Burns, Ann. Surg. **117:** 885-893 (June) 1943.

4. Taylor, F. H. L.; Levenson, S. M.; Davidson, C. S.; Browder, N. C., and Lund, C. C.: Problems of Protein Nutrition in Burned Patients, Ann. Surg. **118:** 215-224 (Aug.) 1943. Levenson, S. M., and Lund, C. C.: Treatment of Burns of the Extremities with Close Fitting Plaster of Paris Casts, J. A. M. A. **123:** 272-277 (Oct. 2) 1943.

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9. Owens, Neal: The Use of Pressure Dressings in the Treatment of Burns and Other Wounds, Surg. Clin. North America **23:** 1354-1366 (Oct.) 1943.

10. Elman, R., and Lischer, C. E.: Amino Acids, Serum and Plasma in the Replacement Therapy of Fatal Shock Due to Repeated Hemorrhage, Ann. Surg. **118:** 225-237 (Aug.) 1943.

11. Evans, E. I., and Hoover, M. J.: The Sulfanilamide Ointment Treatment of Severe Burns, Surg., Gynec. & Obst. **77:** 367-375 (Oct.) 1943.

Virginia; Wells[12] at Hartford; Gurd[13] and his co-workers at the Montreal General Hospital have all given time and intensive effort toward solving some of the unanswered questions in the minds of surgeons everywhere and in working out more effective methods of treating burned patients. Whipple,[14] in ably directing the activities of the Subcommittee on Burns of the National Research Council, has brought together men with helpful ideas and wide experience and has helped to make their ideas and experiences available for the armed forces and medical men everywhere.

In spite of the uncertainty concerning many of the physiochemical changes in body tissues and body fluids, three simple principles have come to be recognized as of fundamental importance in treatment: the surgical cleanliness that prevents infection, the compression of the injured area that prevents fluid loss, the rest that is so important if tissues are to heal in the minimum period of time. Each of these deserves brief consideration.

SURGICAL CLEANLINESS

The relative importance of the ounce of prevention and the pound of cure is nowhere more dramatically demonstrated than in the patient with an extensive burn. With the burned surface free from infection, covered with an occlusive compression dressing and left undisturbed, a patient can remain in comfort for ten, twelve or fourteen days and "emerge from the cocoon" at the end of that period with the burned surface completely healed wherever there has not been whole thickness destruction of skin. The same injury, if infection supervenes, can result in widespread destruction of the covering tissues that have survived the initial injury, long delay in healing and all the well known sequelae of an extensive, infected open wound.

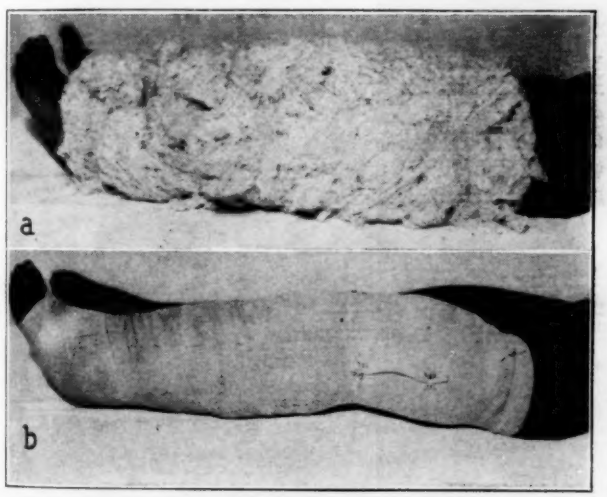

Fig. 1.—*a*, burned extremity covered with dressing surrounded with mechanics' waste; *b*, after application of elastic bandage.

We have long been aware of the rapidity with which virulent infection can develop in an unprotected open wound. Aldrich and Cruickshank,[15] particularly, have emphasized the vulnerability of burned surfaces to infection. We have been peculiarly slow in applying the simple remedy—to cover the burned surface at the very outset so as to avoid contamination; if it has been exposed to contamination, to cleanse it with care to avoid trauma and further contamination; and, finally, to "close" the open wound and keep it closed.

Fig. 2.—*a*, application of compression dressing over burned face; note swelling of upper lip where compression cannot be applied; *b*, appearance on removal of primary dressing seven days after admission.

To cover the burned surface at the earliest possible moment is simply to recognize the oft demonstrated fact that the most important sources of wound contamination are the uncovered mouths and noses of the patient and of every one about him. To cover the wound immediately with the cleanest protective at hand and eliminate those potential sources of infection is simple common sense.

If the open wound has been contaminated before the patient comes to us it is equally logical to attempt to convert it into a clean wound by simple soap and water cleansing, carried out with care to avoid trauma and to avoid further contamination. Concerning the necessity and wisdom of this procedure there has been considerable difference of opinion, owing in large part to the successful results obtained in spite of its omission at the Massachusetts General Hospital after the Cocoanut Grove disaster. There the burned surfaces of the patients were simply covered in the emergency room with sterile towels and shortly afterward with nonadherent gauze and occlusive pressure dressings. One may point out, however, that these cases were not typical of the cases of severe burns that come to the hospital day after day. They had had no first aid care; they had undergone a minimum of exposure to external contamination; they reached the hospital within a very brief period after the disaster occurred. Under these circumstances, and in view of the large number of cases demanding attention, no one, I think, would question the wisdom of the method of treatment carried out at that time.

What happens much more often, certainly with patients admitted to the Cook County Hospital, is that the patient has received extensive, often ill advised, first aid treatment—application of greasy ointment, butter, lard—whatever the corner drug store or home can furnish, and several hours after this application, carried out under voluble mouths and weeping eyes and noses, the patient is admitted to the receiving ward of the hospital.

12. Wells, D. B.; Humphrey, H. D., and Coll, J. J.: The Relation of Tannic Acid to the Liver Necrosis Occurring in Burns, New England J. Med. **226**: 629-635 (April 16) 1942.
13. Gurd, F. B.; Ackman, D.; Gerrie, J. W., and Pritchard, J. E.: A Practical Concept for the Treatment of Major and Minor Burns, Ann. Surg. **116**: 641-657 (Nov.) 1942.
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After such first aid treatment given three, six, twenty-four hours before the patient is admitted to the hospital, to attempt to convert the injured surface into a clean wound again seems to me simply common sense. Needless to say, one would insist on gentleness, the use only of soft cotton and plain white soap (never scrub brushes or tincture of green soap), irrigation with warm salt solution and the surgical cleanliness routinely employed in a well regulated operating room —masks, sterile gloves, thoughtful care to prevent additional contamination. Loose destroyed tissue which has not been washed away I should always lift away with sterile forceps and scissors. Blisters can be left untouched. Most of them will probably give way under a well applied compression dressing. That such cleansing can be of definite aid is indicated by cultures obtained before and afterward. One might say with some justification that swab cultures made after cleansing of a burned surface do not adequately represent the conditions present; but if the original culture shows a great variety of organisms present before cleansing is begun, and if many of these fail to appear subsequently during the process of wound healing, such findings seem to me significant.

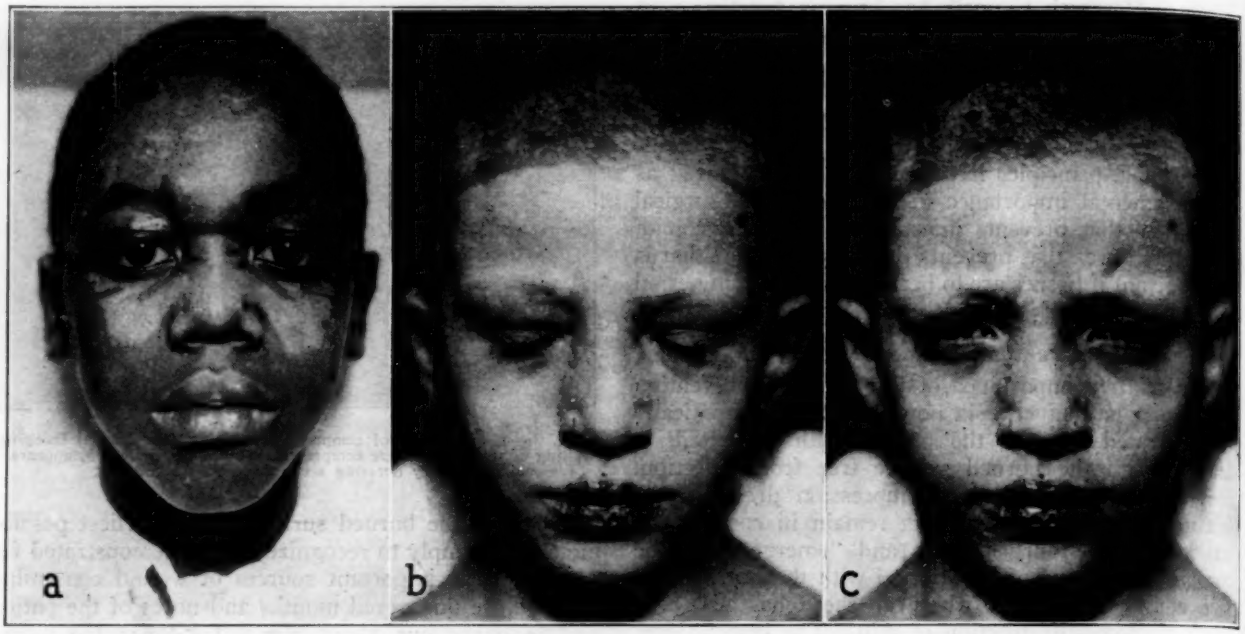

Fig. 3.—Appearance immediately after removal of compression dressing eight days and seven days after injury; note in patient at right absence of swelling in soft tissue of lids.

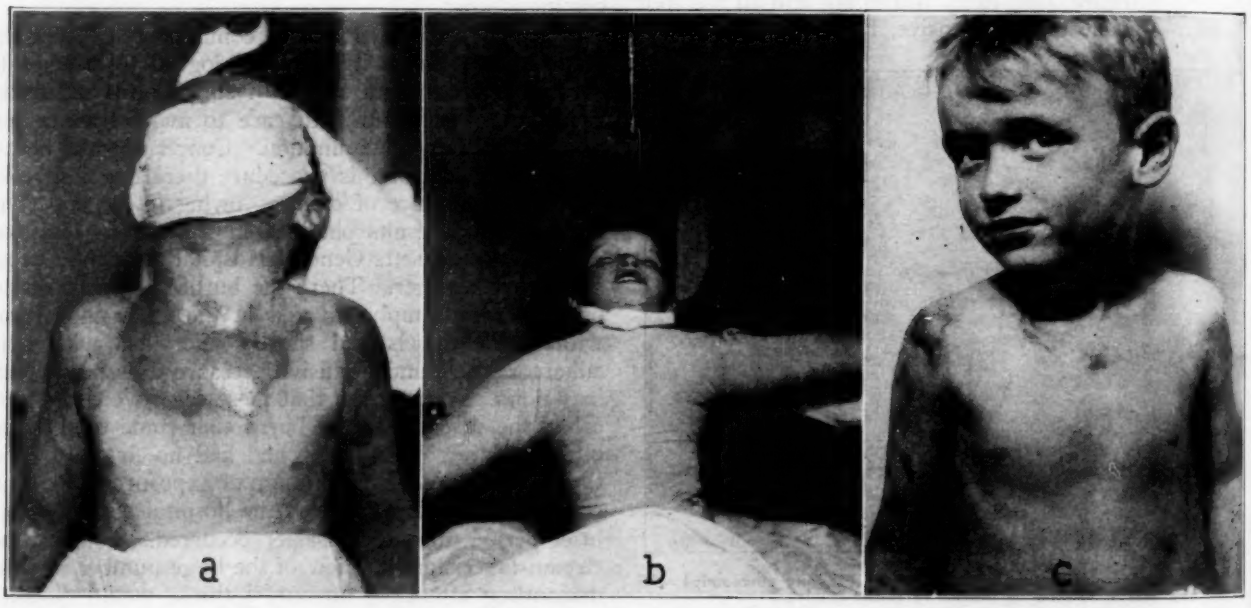

Fig. 4.—*a*, appearance of patient on admission one hour after injury; *b*, compression dressing; *c*, appearance on discharge, eight weeks after injury.

One would admit freely that there are borderline cases in which good judgment must be exercised as to what should be done and what omitted; and it is unnecessary to add that often treatment to anticipate or relieve shock must go hand in hand with local treatment.

THE DRESSING

To cover the burned surface with a nonadherent dressing which permits drainage through it and which can be removed with a minimum of difficulty when removal is indicated seems an entirely logical thing to do. Whether the fine meshed gauze applied directly to the wound surface should be impregnated with petrolatum, boric acid ointment, xeroform ointment, ointment containing zinc peroxide, sulfathiazole, sulfanilamide or sulfadiazine or simply saturated with salt solution is one of the details concerning which there is not sufficient evidence available to permit one to make dogmatic statements. My own preference has been for simple petrolatum, though more recent experiences support the observations made by Meleney [15a] and others that the use of polyethylene glycols containing 20 per cent zinc peroxide is more helpful in controlling potential infection. The fact that a simple nonirritating dressing provides favorable conditions for wound healing is well demonstrated by Cope and Cannon's [16] study of the rate of healing under various methods of treatment of donor sites after removal of skin grafts, and by Hirshfeld, Pilling and Mann's [8] study of the comparative effect of tanning agents and petrolatum gauze on fresh wounds.

To cover the nonadherent gauze with sufficient gauze and mechanics' waste to make possible compression of the entire injured surface is the application of a simple method of arresting fluid loss. When confronted with bleeding, one's first impulse, whether layman or surgeon, is to apply direct pressure and stop the bleeding. Curiously, if we cannot actually see the bleeding we do strangely illogical things: apply ice bags, inject procaine hydrochloride (for the bleeding that follows a sprain), perhaps make incisions to relieve tension. Not often enough do we apply the simple principle of applying direct pressure when the site of bleeding is under the surface and when it involves a considerable area.

The fact is inescapable that the exudation of plasma that occurs from a burned surface and into the soft tissues underneath it is exactly comparable to the hemorrhage that occurs into the soft tissues following a crushing injury. It can be checked and limited in the same way—by the application of a compression dressing over the injured area.

It is scarcely necessary to point out that such a dressing should be a compression dressing and that it should not cause constriction or restriction of the circulation. If an extremity is involved, the dressing should begin at the tips of the digits, and the individual digits should be separated. Once properly applied, it should be supported with splints and left alone. If an extremity is involved, elevation of the part brings the aid of gravity to the return circulation and helps to prevent stasis and discomfort.

REST

Hugh Owen Thomas's dictum "Inflamed and injured tissues need rest" could well be emblazoned over the doorway of every surgical ward. Many of us can recall the days of our internship when it was considered proper and necessary to dress the burned areas of the injured patient each day from the time of his admission to the hospital. I look back with dismay to the injury I inflicted in years gone by on burned patients by repeatedly tearing down the tissue nature was trying to rebuild and by constantly exposing large open wounds to reinfection from the dust of the ward, from my own hands and from my uncovered mouth and nose. Yet I was trying to carry out the teaching and follow the practice of my attending surgeons.

Every surgeon and every burned patient is under everlasting debt to Davidson [17] because he taught us to "close the open wound"; and, since the coagulant crust that he devised could not be easily removed, we learned the wisdom of keeping the wound closed, of not subjecting it to repeated injury and of keeping it at rest.

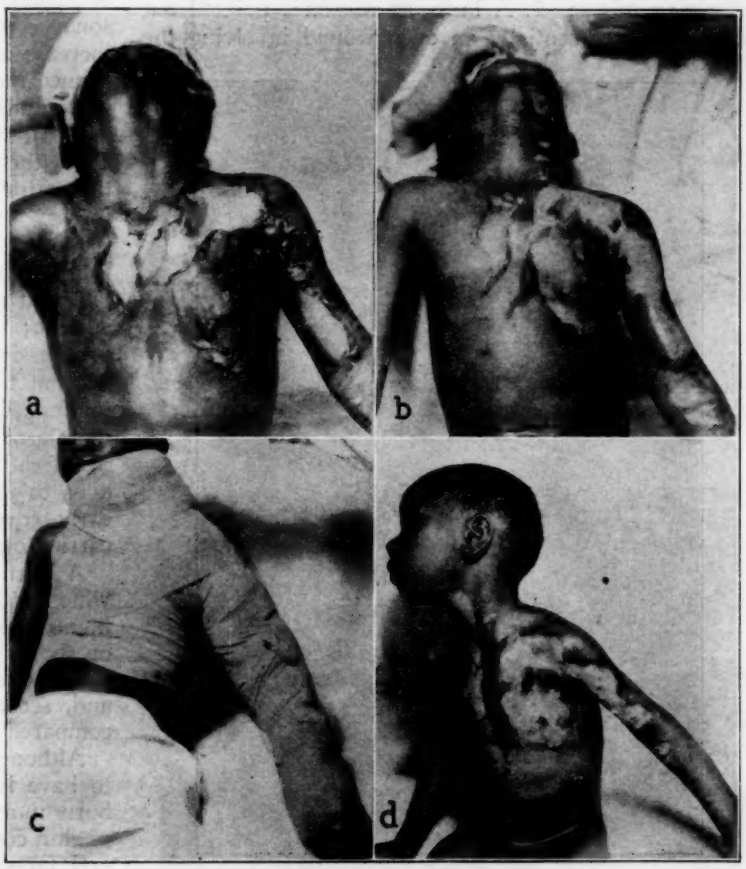

Fig. 5.—*a*, appearance of patient on admission two hours after injury; *b*, after cleansing; *c*, compression dressing; *d*, on discharge, nineteen days after injury.

That a tannic acid crust is not the most satisfactory means of attaining these objectives and that it has some serious disadvantages does not nullify Davidson's work, or the great impetus he gave to efforts to provide better care for burned patients.

Since 1925, when Davidson first advocated closing open wounds with a tannic acid crust, we have learned that the same closure can be obtained by a simple nonadherent dressing which does not produce coagulation of undamaged cells remaining over the burned area and which can and should be left alone, if no

15a. Meleney, F. L.: Study of Prevention of Infection in Contaminated Accidental Wounds, Compound Fractures and Burns, Ann. Surg. **118:** 171-186 (Aug.) 1943.

16. Cannon, B., and Cope, O.: Rate of Epithelial Regeneration, Ann. Surg. **117:** 85-92 (Jan.) 1943.

17. Davidson, E. C.: Tannic Acid in the Treatment of Burns, Surg., Gynec. & Obst. **41:** 202-221 (Aug.) 1925.

infection is present underneath it, until reformation of destroyed epithelium is as complete as possible. It has been demonstrated time and again that, if the whole thickness of the skin has not been destroyed, complete healing of the burned surface takes place in from ten to fifteen days if only infection can be prevented, if the injured surface is protected by the compression dressing and if the all important "rest for injured tissues" is maintained. The same conditions favor separation of the destroyed tissue if whole thickness destruction has taken place and help make possible early replacement by transplantation of skin from another part.

SUMMARY

The logical treatment of burns is based on three simple premises: 1. A burn, as Mason [18] pointed out so clearly, is essentially an open wound involving the superficial tissues and is subject to the same serious complications—infection and hemorrhage. 2. Both infection and hemorrhage can be prevented by well directed treatment at the very outset. The essential features of such treatment are surgical cleanliness, compression of the injured surface to prevent fluid loss, and rest. If infection and hemorrhage are not prevented, control of either or both can become exceedingly difficult. 3. If the injury has resulted in complete loss of covering tissues, replacement at the earliest possible moment is most certain to result in prompt healing, with maximum retention of function.

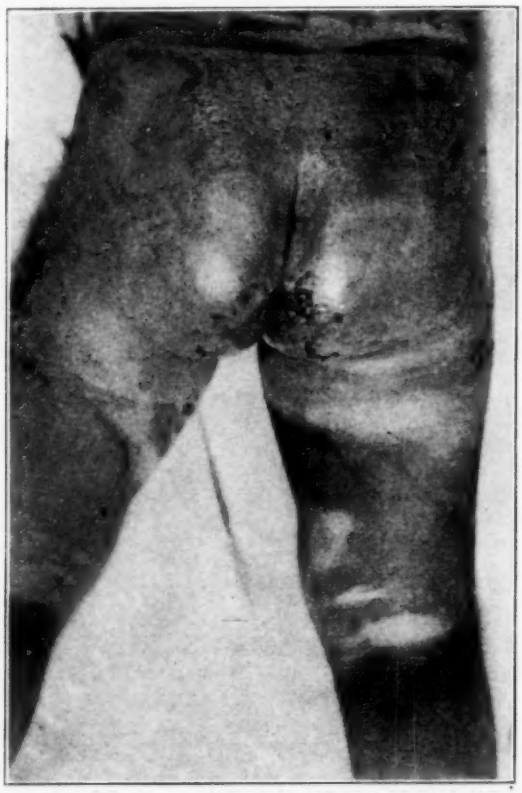

Fig. 6.—Appearance of burned surface twenty days after admission. With aid of indwelling catheter and good nursing care burns about the perineum can be kept covered with compression dressings throughout the period necessary for wound healing.

54 East Erie Street.

18. Mason, M. L.: Local Treatment of the Burned Area, Surg., Gynec. & Obst. **72**: 250-253 (Feb.) 1941.

THE EARLY PLASTIC CARE OF DEEP BURNS

FRASER B. GURD, M.D., C.M.
AND
JOHN W. GERRIE, M.D., C.M.
MONTREAL

Prior to 1925 in the treatment of burns, despite the fact that in all major clinics a high mortality was encountered, comparatively little attention had been paid to the victim of such a disaster. In that year the late E. C. Davidson commenced the publication of a series of articles which in recommending the tannic acid treatment of burns drew attention to the fact that loss of plasma was one of the major causes of death. Davidson's contributions were followed by an enormous increase in the interest shown in the treatment of the burned individual. During the ensuing years gradually more and more attention has been paid to the problem and, with the commencement of hostilities in September 1939, the problem of burn therapy has become one of the major interests of all surgical services in the armed forces.

One of the important features of this increased attention to these problems has been a recognition of the fact that skin is the most useful covering for a burned surface; that not only is plasma loss minimized and progressive hypoproteinemia halted by early skin coverage but that late deformity and disfigurement are thus minimized, and, more particularly perhaps, that the morale of the victim is improved. In our clinic at the Montreal General Hospital it has been one of our chief aims to plan the treatment of the burn wound so that early covering by means of skin grafting might be carried out.

A burn due to heat may be considered as a wound which is accompanied by special features, notably an immediate threat to life, owing to the particular form of shock which characterizes the lesion and the later threat due to toxemia, sepsis and nitrogen imbalance and, secondly, a widespread loss of surface tissue as compared with the depth of it.

Although tannic acid and other escharotics appear to have had a favorable effect in lowering immediate burn mortality, such methods delay the employment of skin coverage by grafting. This delay is due to several facts, namely (1) that the tanned tissue is frequently difficult to remove at an early date, (2) that suppuration beneath the tan has proved a bad feature in many cases and (3) that, as a result of the foregoing, exhaustion of the patient occurs so that, on the one hand, operative intervention must be delayed and, on the other hand, failure of grafts to take is probable. Gradually, and except under very special circumstances, the employment of tanning methods has been discarded in our Montreal General Hospital Clinic during the past three years. Effective shock and toxemia treatment with newer methods of controlling nitrogen imbalance and logical wound dressing care have resulted in a decrease in the mortality rate, and early and timed skin grafting has lowered morbidity and deformity.

Skin grafting is best started as soon after control of the shock and toxemia phases as the patient's con-

From the Montreal General Hospital, McGill University Faculty of Medicine.
This paper, in a symposium on "The Treatment of Burns," is published under the auspices of the Section on Surgery, General and Abdominal.

dition will permit. Theoretically this is before the burned areas pass into a phase of chronic infected granulations and the patient into a state of inanition and chronic protein loss. We are convinced that it is unwise to postpone grafting while waiting for problematic epithelium to grow in from the edges of the wound and for doubtful hair follicle and sweat gland epithelium to reach the surface and spread. The patient with an extensive burn recovers in proportion to the speed and extent of skin coverage. There is an optimum time, and we believe this to be early, when it is advisable to step in and surface the denuded area. In a recent publication from our clinic we [1] have stressed the importance of timing in burn treatment. By timing we have meant that a plan should be laid down so that each step in the treatment of the burned patient should be clearly indicated in a routine sequence. Part of this routine has been that a surgeon trained in plastic surgery is added to the shock and burn teams from the very outset. The plastic surgeon is made, therefore, a member of the team on which the time procedure is based from the first. He is available for advice and also to carry out whatever operative intervention for skin coverage is deemed advisable.

ASSESSING THE BURN DAMAGE

At the outset the significant features of the burn history and the clinical appearance of the burned areas are carefully assessed and are of considerable value in

Fig. 1 (case 1).—Appearance on sixteenth day at first redressing, with the deep burns on the right side of the abdomen and thigh obvious, superficial burns healed.

"timing" the course of the future treatment. This assessment is the most reliable guide to burn depth and the probability of skin grafting to come. A scald from moderately hot liquid with an erythematous or lightly blistered skin will undoubtedly be a superficial burn, healed at the first redressing. A pressure steam burn or burn from excessively hot liquid with wide blisters and intervening searing will be deeper (figs. 1 and 2) and the plastic surgeon is "timed" in, is present at the first redressing and is prepared to go ahead with skin surfacing as indicated. Flash burns are of the same type. Flame burns as from ignited clothing are more uniformly deep (figs. 4 and 5), the skin is seared, and skin grafting will be required. Electrical burns are bad and there is often deep loss of tissue with coagulation which may further complicate the skin grafting which may follow. The plastic surgeon or one ready to carry on this work stands by at each redressing at ten to fourteen day intervals, prepared to carry out the necessary skin surfacing as early as feasible.

1. Gurd, F. B.; Ackman, D.; Gerrie, J. W., and Pritchard, J. E.: A Practical Concept for the Treatment of Major and Minor Burns, Ann. Surg. **116:** 641-657 (Nov.) 1942.

In assessing the burn damage, the extent is calculated and recorded according to Berkow's tables. In estimating depth we have discarded all previous classifications, since they tend to confuse. The only useful classification, we believe, is that which indicates the eventual therapy required. Thus we have the superficial burn in which the epithelium will show quick regeneration or the deep burn which will require skin grafting.

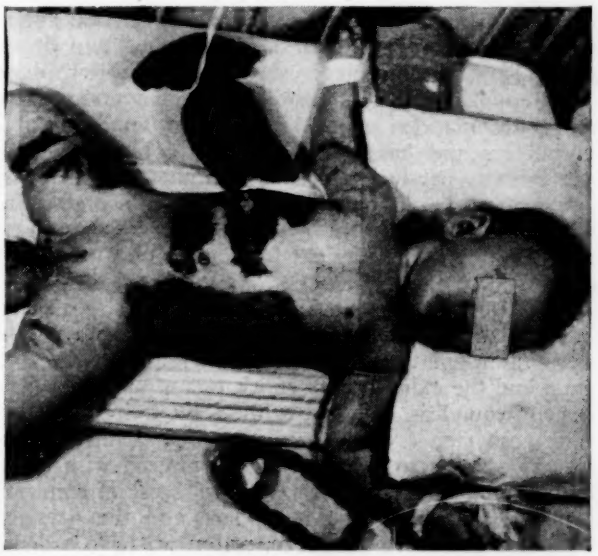

Fig. 2 (case 1).—Appearance at redressing ten days later with donor site on the left side of the abdomen healed and complete take of the grafts on the right.

The use of sodium fluorescein as described by Dingwall [2] may prove to be a help in assessing this matter of depth. How to incorporate the test in the "timed" treatment of burns is the problem.

THE OCCLUSIVE PRESSURE DRESSING OF THE BURN WOUND

The important principles of dressing in preparation of the burn wound for skin grafting are (1) rest, (2) infrequency, (3) occlusion and (4) pressure. To this is added a sulfonamide effect from a 5 per cent oil in water emulsion of sulfathiazole prepared according to the Montreal General Hospital formula, as outlined by Ackman and Wilson.[3] Pressure keeps down edema,

Fig. 3 (case 4).—An extensive body burn at the first redressing on the tenth day. This patient was completely grafted at the third redressing, on the thirtieth day, with isodermal grafts from the mother and autodermal grafts from the patient's back.

2. Dingwall, J. A.: Clinical Test for Differentiating Second from Third Degree Burns, Ann. Surg. **118:** 427 (Sept.) 1943.

3. Ackman, D., and Wilson, G.: Surgical and Gynecological Experiences with an Emulsion of Sulfathiazole, Canad. M. A. J. **46:** 209-214 (March) 1942.

prevents fluid loss, promotes healing, prevents exuberant granulation and effectively replaces the eschar treatments. Infrequency of dressing and occlusion prevent cross infection and bathe the wound in an exudate which contains whatever immune bodies may be present. In none of our cases has a streptococcic infection complicated the picture. In the 5 per cent sulfathiazole oil in water emulsion we have an effective local agent, we believe superior to boric acid or petrolatum dressings. The sulfathiazole is active in the water phase of the emulsion, does not cake, has been found present in the granulations up to 120 mg. per hundred cubic centimeters and has never given us a blood level of over 3.5 mg. per hundred cubic centimeters and rarely over 1.5. It is our opinion that the presence of sulfathiazole in the recipient graft bed up to these percentages in no way hinders but rather enhances graft take.

This dressing is placed following gentle soap and water washing and minimal débridement, with use of operating room technic, as soon as the patient's condition and the exhibition of shock therapy permit. The burned wound is shingled with 4 by 6 inch cuts of wide mesh lace (Nottingham lace of a bastard weave with 11 strands to the inch) well buttered with sulfathiazole emulsion (fig. 4). A liberal layer of emulsion is placed over the wide mesh lace and the dressing completed with surgical gauze, cotton waste to a depth of 4 to 6 inches and flannel bandage cut on the bias and reinforced with adhesive tape (fig. 5). The wide mesh lace tends to splint the wound surface and to provide a base for the dressing, which shows little tendency to slip. At no time have granulations become enmeshed in this or been a bothersome feature. On leg or arm burns, thin plasters may be added to prevent ankle, wrist or shoulder movement. This dressing (fig. 5) is infrequent. The patient is comfortable and, if the general condition permits, can be transported without fear of damage or contamination. This dressing is not removed, and there is no reason to remove it until the tenth to the fourteenth day. It is then taken down in the operating room and either (1) the burn wound is healed or early complete repair is evident or (2) it is grafted in whole or in part and redressed by the same technic for another ten to fourteen days or (3) grafting is deferred and the wound redressed

Fig. 4 (case 4).—The wide mesh sulfathiazole lace being applied.

by the same technic for another ten to fourteen days. In this way the whole burn treatment is "timed" into a series of one to five or six dressings at ten to fourteen day intervals with no intermediate dressings.

TIMING OF THE SKIN GRAFTING

In the treatment of wounds, whether operative or due to trauma, closure may be accomplished by either primary suture, delayed primary suture or secondary suture. For many years McKim and one of us (F. B. G.) have believed that in the care of wounds due to trauma the advantages of delayed primary and secondary suture have not been fully appreciated. In this communication we suggest that as far as the skin coverage of burns is concerned a similar terminology may be used and that there is a place in burn therapy for primary skin grafting, delayed primary skin grafting and secondary skin grafting.

Fig. 5 (case 4).—The complete dressing with a surgical window over the umbilicus for wound bacterial cultures.

1. Primary skin grafting is analogous to primary wound suture. Under the name of immediate grafting it has been described by Forrest Young [4] and was suggested by Sir Harold Gillies on his recent trip to this country when he showed a four day old burn so treated. It is theoretically sound, as the burn is excised, the wound grafted and the area healed by first intention in a week or ten days, a minimum deep burn morbidity. However, it has a very limited applicability and is indicated only in obviously deep, circumscribed burns where there is no evidence, or likelihood, of shock. Few burns come into this category.

2. Delayed primary grafting of burns is analogous to delayed primary suture of wounds. The grafting has been delayed while the general condition of the patient and the local condition of the wound have been made ready. This is the usual and desirable type, and the aim of our clinic has been to graft most burns between the first and third dressings, the tenth to the forty-second day. The burn wound is dressed in an occlusive pressure sulfathiazole dressing and the decision to graft delayed until the tenth to the fourteenth day, when the shock and toxemia phases are passed and the first redressing is done. From the standpoint of the average patient's general condition, this is the optimum time for skin grafting, as it is before the period of inanition and chronic protein loss sets in. The local condition may not be ready but can often be prepared by judicious surgical excision of slough. The local condition is ready for grafting when slough and depth become apparent and before granulations become too obvious. It is at this stage that a test with sodium fluorescein might be helpful. The local area should be ready for a delayed primary graft at the first, second or third ten to fourteen day dressing.

3. Secondary skin grafting from six weeks on is undesirable but may be necessary in cases of badly infected wounds in emaciated patients in whom the burn wound was not initially controlled. It may be necessary in cases treated at home or in isolated areas where skin grafting was not available or its advantages were not realized.

4. Young, F.: Immediate Skin Grafting in the Treatment of Burns, Ann. Surg. **116**: 445-461 (Sept.) 1942.

ISODERMAL GRAFTING

Autodermal grafting, or the use of the patient's own skin, is preferable. Isodermal grafting, or the use of skin from other than the burned individual, is in the nature of a temporary dressing. It has a limited applicability, as in the case of a child recently seen with extensive burns whose own skin proved inadequate and whose general condition was bad.

Isografts dissolve and disappear in three to six weeks. The literature to date has not been very hopeful of securing permanent isodermal grafts of any sort. Padgett [5] tried isografting in 50 well controlled cases and concluded that isodermal grafting was not practicable. Bettman [6] advocates it as a life saving measure. Brown [7] reported 1 case of successful homografting, a small experimental graft from 1 identical twin to the other. However, the whole question of temporary isodermal grafts in the nature of a burn dressing is still wide open. Time [8] has set its stamp of approval on the method, giving publicity to the voluntary donation of convict's skin to burn sufferers and the establishment of skin banks. A recent article by Sachs and Goldberg [9] on foreskin isografts is reassuring and worthy of further work and substantiation. They stress the point of using skin from the newborn and premature infant in that its growth potentialities are greater. They believe that 65 to 75 per cent of their transplanted skin has survived and have been able to identify some grafts eight months later. This may open the possibility of refrigerated skin banks for burn emergencies.

INFLUENCE OF INFECTION ON GRAFTING

In none of the cases that have been under our control from the time of injury has infection delayed grafting. In a number of cases prior to admission to the hospital moderately severe infection with accompanying inflammatory reaction had already become established. In all of the latter group of cases the ulcers were ready for grafting after the application of but one dressing, that is at the end of from ten to fourteen days. The occlusive pressure sulfathiazole oil in water emulsion dressing in our experience has controlled or so moderated infection that grafting may be successfully carried out. At no time after the first redressing have we been able to culture streptococci, Bacillus pyogenes or Proteus vulgaris, the micro-organisms which seem to have the most deleterious effect on skin grafting. Although we have usually been able to culture Staphylococcus aureus, these have been present in but small numbers, and have not proved to be of importance. To summarize our experience in this regard, therefore, we feel justified in making the statement that controlled staphylococcus effects are not a contraindication to skin grafting when the technic recommended in this contribution is employed. The more serious infections have not in our experience occurred.

GRANULATIONS AND GRAFTING

Exuberant granulation tissue is an abortive attempt at wound healing that has been unsatisfied by epithelial covering at the appropriate time. It decreases the certainty of graft take and increases subgraft scar. Skin grafting of burned surfaces is therefore preferable before granulations become obvious. Exuberant granulations are the result of prolonged wound treatment and are no serious contraindication to skin grafting provided they are removed. It is preferable to remove exuberant granulations and graft rather than to give them prolonged treatment to render them less exuberant before grafting. The removal is done by a scraping motion with sharp scalpel rather than a slicing procedure. This provides a more even base with less bleeding. They are taken down to the firm yellow base from which they spring. The scalpel is preferable to a curet. Bleeding is, as a rule, easily controlled by the application of hot packs and the prompt application of the skin graft, which itself seems to have a pronounced hemostatic effect. Sutures or ties are seldom necessary to control hemorrhage.

THE CHOICE OF DONOR SITES

The choice of a donor area is occasionally influenced by the site and extent of the burn and the sex of the patient. With small burns in female patients it is well to take skin from the buttocks, loin or abdomen, or some place in keeping with the trend of increasing exposure in women's styles. In a limited arm or limb burn it is convenient to take skin from an adjacent area. In extensive burn cases one finds the skin where one may and hopes there will be enough. In such severe burns it is well to take extremely thin grafts and plan on cutting successive crops from the same donor sites.

Various body surfaces present definite anatomic features making them suitable, or otherwise, for skin donation. The Padgett dermatome makes all body surfaces available, and reasonably large and even sheets of skin may even be cut from the back or front of the chest cage.

Histologically, back, loin and buttock skin are most suitable and large sheets may be taken to considerable depth. These areas provide both a thick epidermis and dermis with excellent healing qualities. Abdominal and bicipital skins are thin, especially in young patients. Inner thigh skin is also thin, the outer thigh being of an intermediary type. The abdomen and front chest areas present dressing difficulties and tend to move with respiration even under our occlusive pressure dressings, with a resultant delay in healing.

The back, loin and outer thigh have been our donor sites of choice. They are dressed in identically the same way as the original burn with an occlusive pressure sulfathiazole dressing that is not removed for two weeks. The site is then usually healed or nearly so, is brought out into the air as quickly as possible and is massaged with petrolatum or olive oil. Prolonged dressing of donor sites tends toward maceration and further skin destruction or delay in healing.

THE TECHNIC OF FREE SKIN GRAFTING

The Padgett dermatome has taken some of the "ifs" out of skin grafting and has many advantages over the older knife and razor methods. It is not fool proof, and one must become familiar with the vagaries of knife, cement and drum. If used with care and understanding, even sheets of skin may be cut from almost any part of the body. It has the advantage of calibrated adjustment, and even thickness may be cut from 0.006 of an inch to full thickness of the skin. The Blair-Brown knife and suction box technic [10] has been an excellent method, especially in the hands of experts,

5. Padgett, E. C.: Care of the Severely Burned, Arch. Surg. **35**: 64-86 (July) 1937.
6. Bettman, A. G.: Homogenous Thiersch Grafting as a Life Saving Measure, Am. J. Surg. **39**: 156-162 (Jan.) 1938.
7. Brown, J. B.: Homografting of Skin, with Report of Success in Identical Twins, Surgery **1**: 558-563 (April) 1937.
8. Skinning Convicts, Time **42**: 46 (Nov. 15) 1943.
9. Sachs, A. E., and Goldberg, S. L.: Foreskin Isografts, Am. J. Surg. **60**: 255-259 (May) 1943.
10. Blair, V. P., and Brown, J. B.: Use and Uses of Large Split Skin Grafts of Intermediate Thickness, Surg., Gynec. & Obst. **49**: 82-97 (July) 1929.

but the consensus seems to be that the dermatome has even more to offer. The Marcks attachment to the Blair-Brown knife is possibly a further refinement of this method.

Thick grafts are less certain of take than are thin grafts, but the thick graft contains more of the elastic tissue of the dermis and is therefore of a better texture. In the early burn wound it is well to concentrate on take rather than on texture. The latter can be corrected later, if necessary. It is the opinion of our pathologist, Dr. J. E. Pritchard, that some of our thin grafts have acquired additional subgraft dermis and its contained elastic tissue in the course of time. Our preference has been for grafts between 0.008 and 0.016 inch in thickness, which is on the average 50 per cent, or less, of the total skin depth.

The dermatome is set up on a separate table and, if possible, the wound preparation and skin grafting are kept as separate procedures. The skin is sliced off to the desired amounts and depths. The thinner grafts are usually transferred to sheets of our wide mesh lace buttered with sulfathiazole emulsion. The skin adheres to the lace, so that it is more easily handled, since the surfaces which are at least partially covered by cement are prevented from sticking together. The lace and skin are sewn in; the lace helps to "fix" or "snub" the skin into position. If thicker skin is used, it is sewn in alone without the intervention of the lace, as it contains too much elastic tissue and curls away from, and will not adhere to, the lace.

The amount of skin transferable at one operation is limited only by the amount of time available and the patient's condition. In extensive burns it is wise to have two teams at work, one cutting the skin and the other sewing it in place. In this way maximum areas of skin may be transferred at one operation. Grafted and ungrafted areas are dressed together as was the original burn and left for ten to fourteen days before another intervention. If, at this next dressing, skin coverage is complete or nearly so, sutures are removed and the graft and donor sites exposed to the air and given petrolatum or olive oil massage.

SKIN GRAFTING THE BURNED FACE

Burns of the face present a different problem to those of other parts of the body. Free skin grafting, at best, is not a satisfactory method, since it is so likely to result in a "patchwork quilt" appearance. Skin transferred from other parts of the body usually tends to retain its own color and texture or, what is worse, to become pigmented in an unsightly fashion. It is clear that the surface of the eyelids must be replaced early, since serious injury to the eyeball may otherwise be suffered in consequence of the ectropion which is sure to develop. Similarly, repair of ectropion of the lips, particularly of the lower lip, should be an early procedure chiefly because the drooling which occurs under these conditions has such an unfavorable effect on the patient's morale. The grafting of skin to other parts of the face should however, we believe, be postponed for many weeks in most cases since, in addition to the unpleasant appearance of the grafted face, it is clear that on the one hand deep burns of the face are comparatively unusual, and on the other hand the skin of the face exhibits an unusual capacity for epithelial regeneration from deeply placed hair follicles and sweat glands.

It is a matter of common knowledge that the cartilages of the ears and nose are very liable to necrosis as the result of burns and that large portions are often lost. The repair of these and other gross deformities becomes the problem of late reconstruction and is not discussed in this contribution.

It should be an axiom that "face skin is best for face reconstruction." As a general principle we believe that a scarred face is preferable to the masklike effect which follows free grafting in the early post-traumatic period.

BURNED PATIENTS GRAFTED

A survey of the last 100 consecutive skin grafting operations that we have performed shows that there were 35 delayed primary grafts in 22 burn patients. In addition, 12 skin grafting operations were carried out on 8 patients for the late reconstruction of burn deformities. This is a total of 47 out of 100, or 47 per cent of our skin grafting operations for primary or secondary reconstruction of the burned patient. It is thus seen that approximately one half of our skin grafting procedures have been rendered necessary on account of burns.

REPORT OF CASES

A few instructive cases are briefed, with comment on the lessons learned:

Case 1.—A 35 per cent scald in a 14 month old girl admitted in severe shock. Wide blisters with intervening "white leather" areas. Shock treatment and an occlusive pressure sulfathiazole emulsion dressing within four hours of the accident. Excellent recovery from shock. First redressing on the sixteenth day, when the superficial burns were found healed and the deep areas obvious (fig. 1). The sloughs were surgically removed and covered with skin of 0.008 inch thickness from the opposite side of the child's abdomen. Second redressing ten days (fig. 2) later with complete graft take, and child discharged three days later.

This case, in our opinion, exemplifies ideal "timed" treatment of a severely burned patient with a minimum period of morbidity. Early skin coverage, moreover, anticipated and so prevented the onset of exhaustion due to nitrogen imbalance.

Case 2.—Circumscribed, obviously deep burn of the thigh 8 by 6 inches in a man when a motor car engine was pushed against the thigh in an accident. Treated as an outpatient and sent in for grafting on the thirty-fifth day. Placed in occlusive sulfathiazole dressing and grafted four days later with complete take. Discharged fourteen days after grafting with complete healing.

This would have been an excellent case for immediate primary grafting. The patient might then have been in the hospital only fourteen days from the time of burning until complete healing. There was a lapse of thirty-five days in "timing."

Case 3.—A 55 per cent extensive deep burn of the abdomen, thighs and legs of a man from burning clothing. Remarkable recovery from shock and toxemia. In excellent physical condition from the fifteenth to the thirtieth day, with subsequent progressive decline from inanition and hypoproteinemia. Because of extensive slough, grafting was deferred until the fifty-fifth day. Further grafting on the sixty-ninth day, with death three days later from chronic protein loss.

We believe that this patient might have lived if operative removal of burn slough and the application of grafts had been instituted about the fifteenth day and carried on progressively while the patient was still in good condition. Such a case also would now receive the high protein instillation into the digestive tract, as recommended by Charles Lund and his associates at the Boston City Hospital.

CASE 4.—A 30 per cent deep flame burn of the abdomen, thigh and lower leg of a 23 month old boy. Occlusive sulfathiazole pressure dressing routine from the start, but grafting delayed until the third redressing (fig. 3) on the thirtieth day because of the extent of the burn and the depth of the slough. The thigh and lower leg were completely covered with 0.008 inch skin from the mother's buttock and the abdomen with 0.008 inch skin from the child's back, in one operation. Definite improvement in the child's condition. At the fourth dressing, on the fortieth day, the child's skin had taken completely on his abdomen and the mother's skin about 80 per cent on the thigh and leg. This will be redressed at ten day intervals and the thigh and leg regrafted with the child's own skin, if and when the mother's skin disappears.

An example of extensive skin coverage at one operation using autodermal and isodermal grafts. This is a recent case; we are consequently unable to report a final result.

CONCLUSIONS

1. Skin grafting of the burned area at the earliest possible moment is one of the chief aims in burn treatment. Such a procedure minimizes protein loss, prevents contractures and maintains morale.

2. An occlusive pressure dressing with a 5 per cent sulfathiazole oil in water emulsion, timed at infrequent intervals, has been helpful in achieving this result.

3. Delayed primary skin grafting between the tenth and fortieth days is the usual technic. Occasionally immediate primary skin grafting may be indicated.

4. Isodermal grafting has a limited but perhaps valuable applicability.

5. Under the occlusive pressure dressing routine infections are seldom bothersome and do not delay grafting.

1538 Sherbrooke Street West.

THE LATE PLASTIC CARE OF BURN SCARS AND DEFORMITIES

JOHN STAIGE DAVIS, M.D.
BALTIMORE

The enormous increase in the number of burns of all types, caused by all sorts of agents, which are the direct result of waging war on land, on the sea and in the air will necessarily increase the number of burn scars, many of which will eventually have to be treated by plastic repair.

The status of the modern methods of burn treatment in all its phases has been considered in the preceding papers of this symposium. In completing the symposium the late plastic care of burn scars and deformities is dealt with, and in preparing this contribution I have drawn freely from articles which I have previously published on the treatment of scars of various types.

The earliest paper of importance which appeared in the United States on burn scar contractures and the innumerable subsequent deformities was written by Thomas D. Mütter, professor of surgery in Jefferson Medical College, Philadelphia, and was published more than a hundred years ago, in July 1842, in the *American Journal of the Medical Sciences*. His remarks on burn scars and the methods of handling them by operative procedures are well worth while reading today by any one interested in the subject, and some of his procedures are good practice still.

With the newer methods of treating burns, which are designed to eliminate infection and prevent the loss of serum and in which early skin grafting or flap shifting is done to induce healing, the occurrence of objectionable scars and of subsequent deformities due to scar contractures should be much less common than heretofore has been the case. However, in spite of these new methods burn scars still occur, and contractures may still form in those instances in which the full thickness of the skin and various depths of the underlying tissues have been destroyed.

The vast majority of burn contractures, and the deformities caused by them, must be treated by operative methods, and there is little that is new in the procedures which have been found most effective in dealing with them.

Burn scars and burn contractures are probably more consistently botched than any other group of cases, and this is largely because they are deemed simple and are attempted by nearly every surgeon in whose hands they may happen to fall or to whose service they may be admitted. The care of these contractures should be only in the hands of surgeons skilled in plastic repair, who have a thorough knowledge of how to deal with scar or scar infiltrated tissue and who understand the possibilities of its utilization.

It is a sound plastic principle that when scar tissue is present it should be completely removed before attempting repair by suture, by skin grafting, by flap shifting or by flap rotation. In many instances, however, it is obviously impossible on account of the size of the scar and the situation to excise it completely and carry out any of the procedures just mentioned. In these cases scar tissue can and should be utilized in accomplishing the final restoration.

The surgeon who is inexperienced in the handling of scars will frequently operate early on burn scars of all types, apparently not realizing that nature assisted by massage and physical therapy, and sometimes by carefully given x-ray or radium therapy, will in the course of months materially change the character and appearance of the scar. My own practice is to wait until at least six months have elapsed after healing is complete before operating; in other words, until the scar is matured. In this way useless operations are avoided and procedures which would have been required had the operation been done early are frequently found unnecessary. Furthermore, if it is advisable to utilize scar or scar infiltrated tissue in the final repair, the circulation is better, the scar is softer and suitable areas may be shifted as flaps with considerable advantage. It has been my observation that the employment of scar tissue in the final repair is not utilized nearly as often as it can and should be.

All types of scars may follow burns, and the character of the scar depends on the depth of destruction, on the extent of the burn and the location, and on the rapidity and character of the healing. Scars may be unstable, smooth (skin level), depressed, adherent contracted and keloidal in type. More than one type of scar may be present on the same patient following the healing of the original burn. Any one or all of these may cause deformity and loss of function. Pain may also be a symptom in any type of burn scar. The deformities caused by burn scars range from very slight skin defects and contractures to the most horrible distortions of all parts of the body.

The power of scar contractures is very great and may cause a variety of unusual deformities, for exam-

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ple drawing the shoulders toward each other, or completely dislocating joints.

In burn contractures of the neck, chest and chin the shape of the mandible is often distorted, and the full development of the bone is checked by scar pressure. The alveolar process is frequently turned outward and the teeth forward and even downward in severe cases. Long bones may be bowed, and joint surfaces may be angled. In certain old extensive burn scars with adhesions, for instance between leg and thigh or thigh and pelvis or the arm and chest, it is advisable to do the relaxing operation in stages, as shortening of muscles under contracted scars and also shortening of vessels and nerves must be thought of. The friability of bones due to the atrophy of disuse is also of importance.

The location and extent of the scar modify prognosis and treatment. In the late plastic care of burn scars and deformities a number of methods may have to be employed, either singly or in combination, as there is no one procedure of choice which is applicable for the relief of all types of cases.

The most important procedures are excision with closure by sutures; excision with skin grafting; excision with lateral relaxation incisions in adjacent normal tissue, advancement to cover the original defect, with skin grafting of the relaxation defects; gradual partial excision with closure; the use of relaxation incisions in the scar itself with skin grafting; the use of Z-plastics; the use of skin grafts of various types, and the use of pedicled flaps. All of these maneuvers must be understood by the surgeon doing this work, and his judgment should be good enough to select the method, or combination of methods, which promises the best results in each individual case. These methods will be considered briefly, and then the various types of scars and the procedures which in my experience are most suitable for their correction in various regions will be taken up.

In my own operative work on burn scars I have found it advantageous to mark out with 5 per cent brilliant green in 95 per cent alcohol all the incisions to be made. This is most helpful in planning relaxation incisions and procedures such as Z-plastics, in tissue made up of scar or strongly infiltrated with scar. When scar is incised, it is quite remarkable in certain instances to note the retraction of the wound edges and, where scar flaps have been released, to note the extraordinary changes in line of pull into unexpected directions.

OPERATIVE METHODS OF TREATING BURN SCARS AND DEFORMITIES

Excision.—When it is possible, a burn scar which lends itself to such treatment should be excised completely and the wound closed in layers. If, after excision, closure is not possible, even with undercutting, then the defect may be skin grafted with the selected type of graft.

Another method which is very helpful, the principle of which was well known in the time of Celsus, is that, when the scar has been excised and the wound cannot be closed by suture, to make relaxation incisions in the normal tissue beyond the defect on one side or both down to the deep fascia if necessary and then undercut the tissue, making a double pedicled flap. This flap may then be immediately advanced to cover the defect left by excising the scar or, if circulation is doubtful, may be sutured back into its original bed to be used later as a delayed transfer double pedicled flap. The method may be modified by forming the double pedicled delayed flaps, before the scar is excised, and then, when the circulation of the flaps is assured, excise the scar and immediately shift in and suture the flaps. When the flap or flaps are shifted in finally and sutured over the original defect, the wounds in the normal tissue are grafted, to hasten healing.

Another method, which will sometimes give relaxation and avoids further incisions through skin is, after undercutting outward on each side as much as necessary, to make an incision from below, parallel to the length of the wound on each side, at the outer margin of the undercut area up through the subcutaneous fat without cutting through the skin, and then if relaxation is sufficient close the original wound with sutures.

Gradual Partial Excision with Closure.—The first paper on gradual partial excision was published in 1915 by H. Morestin. This most useful plastic principle is a progressive reduction in the size of a scar by successive excisions, with closure. The method depends for its success on the fact that the skin beyond the lesion has a tremendous stretching capacity, especially when the stretching is done slowly.

After determining the amount of tissue to be removed, the area is marked out. The pattern is usually made in the shape of an elongated ellipse whose long axis, in order to facilitate closure, is in the most advantageous direction; but any shaped area may be removed as long as the resulting defect may be closed by sutures. The marked out area should be cleanly excised with a sharp knife down to normal tissue, care being taken to avoid unnecessary injury to the wound edges. Some undercutting may be necessary. All hemorrhage should be checked and the wound closed with deep sutures of fine white waxed silk or cotton, to take off tension, and on-end mattress sutures of horsehair or nylon to approximate the wound edges.

After a suitable interval, several weeks to several months, depending on the situation and when the surrounding skin has stretched sufficiently, the process is repeated and again repeated at suitable intervals until the scar has been completely removed and a narrow line scar remains. The successive excisions should ordinarily be made inside the area of the scar until the final step is reached, when it may be necessary to encroach slightly on the surrounding tissue. Proceeding in this way, one finds that the final narrow scar will be little if any longer than the long axis of the original scar. The technic is simple, and there is little danger in the procedure. Before the primary and secondary operations, preliminary massage to soften and loosen tissues is advantageous. The amount which it is safe to excise at any one operation varies with the elasticity of the skin around the scar.

If carried out properly, gradual partial excision will result in a narrow scar, which may be either straight or curved or angled depending on the way in which the excisions have been made. Often it can be managed so that the final scar will lie in a natural fold. Occasionally in extensive scars it is impossible to remove it all by this method, but the size of the scar may in this way be reduced sufficiently to make a simple plastic procedure possible.

Relaxation Incisions.—As I have said before, it is a good plastic principle to excise all scar tissue completely before making a repair, but in many instances it is not practical to carry this out, and when this is the case relaxation incisions in the scar itself may be essential in order to bring about a satisfactory result.

The purpose of relaxation incisions through scar tissue is to relieve scar tension which may either interfere with growth or with function or with permanent healing or with all of these. Relaxation incisions have been most helpful to me in dealing with large contracted thick adherent scars, and also with unstable scars which are difficult to heal and which when healed frequently break down.

The contracted portion of the scar is put on the stretch, the most binding area is located and the proposed incision line is marked out transversely across that portion of the scar. If several areas are to be relaxed, they also are marked out. Then the scar is divided completely through its full depth down to normal tissue and if possible out to normal tissue surrounding the scar. Deep attachments are loosened. Relaxation incisions may be single or multiple. They may be straight, curved or angled. If the margins of the incisions are tight and the underlying tissue tends to bulge out into the wound, the incisions may be lengthened or the margins may be relaxed by radiating incisions until they are slack. On the shaft of an extremity the relaxation incisions are ordinarily made parallel with the length of the limb, but in other large scars the incisions are made across the scar pull in any needed direction.

In making relaxation incisions the tendency is always to underdo rather than to overdo, and it must be borne in mind that the relaxation must be as thorough as possible without interfering with the circulation of scar areas between the incisions.

After relaxation incisions have been made, the tissues in the defects may be ready for immediate grafting or it may be necessary to allow a few days to elapse in order to improve the circulation and stimulate granulations before grafting can be done. All types of grafts may be used to heal the defects made by the relaxation incisions. In order to conserve skin I frequently employ small deep grafts, but split (thick Ollier-Thiersch) grafts or whole thickness grafts may also be used, depending on conditions.

In very large scars one may have to proceed in stages, gaining as much as possible each time. The first incisions may be done, the defects healed by skin grafting, and later further relaxation in other portions of the scar may be carried out in the same way. After several months have elapsed, other relaxation incisions may be done if necessary, sometimes across those made previously or in the direction not indicated at the first operation. In the thick heavy scars after relaxation incisions have been made it will be found that in time the relaxed scar tissue, although it may originally have been hard and rigid, will soften and change its characteristics so that it will be usable in the final result.

Z-Plastics.—In the contracted scar where there is a prominent scar band, bridge or web, or a scar groove, with fairly lax tissue on each side, the Z-plastic is of great use and up to the present time has been used extensively by only a few surgeons. The name is given to the method because the outline of the incision is roughly that of a Z. The maneuver will be considered here in its simplest form.

With the scar bridle or groove under tension, the proposed incisions are marked out. The central line of the Z is laid down along the most prominent part of the bridle in the selected length. Then the arms of the Z, which are of the same length as the central line, are laid down at each end of the central line on the opposite sides and at an angle of about 60 degrees to it, and they should be parallel to each other.

When the incisions are made along these lines, two broad based triangular flaps are formed whose bases are opposite each other. These flaps are undercut and completely mobilized. They are then transposed so that their outer margins approximate and the tips of the flaps touch the outer corners of the bases of the opposite flaps. The edges are then sutured with interrupted or on-end mattress sutures of nylon or horsehair. The sutured wound is also Z-shaped, but the Z is turned through about 90 degrees, is elongated, and the central line of the original Z lies transversely across the scar pull. The actual amount of relaxation varies between 50 and 100 per cent of the length of the central line of the Z.

By Z-plastics, scar contractures may be relieved by the utilization of scar tissue. The success of the method depends on the presence of slack tissue on each side of the scar band or groove. By its use, in many instances, skin grafting or flap shifting may be avoided, and it is one of the most generally useful plastic procedures.

Skin Grafts.—A skin graft is a free transplant. The technic of obtaining the various types of skin grafts is so well known that I will not go into it here. Grafts may be grouped into thick grafts, which include small deep grafts, and whole thickness grafts (Wolfe-Krause grafts), half thickness or split grafts, which are really thick Ollier-Thiersch grafts, and thin grafts, which include true Reverdin grafts and true Ollier-Thiersch grafts, both of these grafts being composed of the epidermis with the tips of the papillae of the corium. In other words, the tiny Reverdin and the larger Ollier-Thiersch grafts are as thin as they can possibly be cut.

Another type of skin graft, which is sometimes used to fill out depressed scar areas, is the cutis or dermal graft. It contains all the components of the skin except the epidermis. The size of the graft required is marked out on the donor surface, and then every particle of the epidermis with the papillae of the corium is removed. The remaining portion of the corium is either completely dissected away from the fat or a small amount of fat may be left attached, and this tissue is then used to fill out the depressed area. It is usually placed in an undermined pocket and should be spread out and held with sutures in position in the bed prepared for it. The process may be repeated in a few months if the filling out process has been insufficient.

The type of graft used after excision or after the relaxation of burn scars depends on the area to be grafted or varies with the choice of the surgeon. In my work I seldom use either the Reverdin graft or the true Ollier-Thiersch graft in covering operative defects made in burn scars, as these grafts are too thin for stable repair.

In many clinics the so-called split graft or dermatome graft, which is a thick Ollier-Thiersch graft, is the only type of graft used for covering practically every raw surface, either granulating or freshly made. This is unquestionably a very useful type of graft and I frequently use it, but it should not be used on every occasion even if it can be easily cut with a Padgett-Hood dermatome. I find small deep grafts most useful especially in grafting relaxation incisions in regions covered by clothing, and I also frequently use whole

thickness grafts on such areas as the face, the hands, the feet and in other exposed positions.

Skin Flaps.—A skin flap is a mass of tissue which is attached at some portion of its periphery or base by a pedicle through which it receives its blood supply, and it can be shifted only as far as its pedicle will allow.

A skin flap is made up of the whole thickness of the skin with as much of the subcutaneous tissue as may be desired and is used for the repair of those areas which, in order to obtain a resistant elastic healing, require thicker tissue than simple skin grafting will supply.

There are three basic methods of using flaps, and innumerable modifications of each method:

1. The French method of advancing or sliding flaps from adjacent tissue after undercutting. In this there is little if any twisting of the pedicle.
2. The Indian method, in which the flap is obtained from neighboring tissue and is placed in its new bed by more or less twisting or rotating the pedicle.
3. The Italian method, in which the flap is obtained from a distant part, say the arm. The pedicle may or may not be twisted.

Flaps may have a single pedicle, or the pedicle may be double. The flap may be transferred to its new bed immediately after it is raised, or the transfer may be delayed, which means that in order to assure its circulation some time may be allowed to elapse between the formation of the flap and its transfer. The flap may be placed directly on the defect prepared for it, in one stage either at once or after a necessary delay. The transfer may be in more than one stage in those instances in which, on account of the distance of the defect from the tissue chosen to fill it, it becomes necessary to grow that tissue into another part and subsequently carry it on that part to the defect. Flaps may be carried in this way almost anywhere on the body. The area from which a flap is raised may be closed by sutures, or, if this is not possible, the defect may be skin grafted.

There are certain scars, which may be excised and which cannot be closed by suture, and where, for instance on the face, a skin graft would be unsatisfactory on account of color or the possibility of subsequent pigmentation. In these cases the repair may often be most satisfactorily made by the rotation of flaps of skin and the required amount of subcutaneous fat from adjacent tissue.

In the repair of any part which has been lined with skin or mucous membrane by means of a pedicled flap, it is necessary in order to prevent future scar contracture to line with epithelium the portion of the flap which is to replace this part. In order to accomplish this the flap may be folded on itself in one of several ways, or the portion to be used may be grafted with skin or mucous membrane, as the requirements may be.

The tubed flap is probably the most generally used of the delayed transfer double pedicled flaps. It was devised by Filatoff in 1916 and independently by Gillies in 1917. The method of its formation is well known.

TYPES OF SCARS

"Pain" is a symptom which may be found in every type of scar but which fortunately is fairly unusual in old scars. Burn scars may be painful, and the pain in certain instances is sufficiently severe to cause loss of function or to incapacitate the patient even though the scar may be quite small. Larger scars of all types may also be painful, but in these cases it is often possible to demonstrate localized points of hypersensitiveness, either single or multiple. The pain may be caused by inflammatory changes, by scar pressure on nerves or by the formation of neuromas on the small skin nerves. I have seen cases in which the pain in the scar increased in intensity as time went on, but more often the pain tends to become less severe with time and ultimately may cease as the scar matures and softens, so a period of observation is advisable before radical treatment is indicated. The treatment is simple and effective. If the painful scar is small, it should be completely excised and the wound accurately sutured. In the larger scars the painful point or points should be carefully plotted out, and then these areas should be completely excised down to normal tissue, preferably in the shape of an ellipse, and the wound closed with sutures. Sometimes a single painful point may cause the entire trouble in a large scar, and complete relief will follow excision.

Depressed Scars.—Depressed scars following burns are usually the result of third degree burns in which there has been considerable loss of tissue. The basis of all methods of dealing with depressed burn scars, when excision is possible, is excision with closure of the soft parts in layers to fill out the defect.

Some depressed burn scars are adherent to underlying tissues such as muscle or bone and, besides being objectionable in appearance, cause pain, deformity and interference with function. If possible these scars must be completely excised and the defect repaired by closing the soft parts in layers or by flap shifting. When the scar is long and narrow and depressed and adherent, as they are sometimes seen on a leg or arm following a steam radiator burn, the deeper portion of the scar may be used as a buttress over which skin and subcutaneous tissue is closed. This is the method of Poulard, and I find it most useful. The scar is outlined with an incision, which is carried down to normal tissue, and the margins are undercut. The epithelial surface of the scar inside the outlining incision is carefully dissected off, and then the tissues beyond the scar, which have been undercut sufficiently, are advanced over the scar buttress with deep sutures of waxed white or black fine silk or cotton, and the skin is closed with on-end mattress sutures of 4.0 or 5.0 single filament nylon, or with horsehair. This will eliminate the depression and result in a narrow unobjectionable normal level scar.

After the excision of a depressed scar, which can be closed by suture, it is sometimes necessary, in order to fill out the depression, to roll in flaps of adjacent subcutaneous fat whose pedicles are either below or are attached to the skin itself. These are advanced and sutured into proper filling position, and then the skin is closed.

If a depressed scar is large and cannot be repaired after excision by closure of the adjacent soft parts, it may be necessary to bring in a pedicled flap of skin with sufficient subcutaneous fat either from adjacent tissue or from a distant part to fill the defect. Another method is to make a delayed transfer double pedicled flap of skin and subcutaneous tissue and shift the tissue from one or both sides of the defect into the defect, thus filling it out. If the lateral defects cannot be sutured, a split or whole thickness graft may be used. If the depressed scar is large, soft and movable it may be improved by gradual partial excision, by rolling in pedicled flaps of adjacent subcutaneous fat, by undermining and inserting a fat and fascia graft or by inserting a dermal graft. In suitable cases autogenous carti-

lage or preserved icebox cartilage cut to pattern or diced, as suggested by L. A. Peer in 1943, may be used to fill out a depressed scar of reasonable size. In my experience the use of foreign bodies or paraffin for this purpose is contraindicated.

Extensive smooth (skin level) scars may follow burns on any part of the body and, when they are soft and movable, are frequently best left alone, especially if they are in inconspicuous situations. Should removal be desired, one or more of several methods may be employed: excision followed by skin grafting; the shifting in or the rotation of a flap of skin and subcutaneous tissue; gradual partial excision.

Large, thick contracted adherent scars are a common type and may present difficult plastic problems. They are often of long duration and may vary in thickness from that of the normal skin to 2 to 3 cm. or more. They may be found in any location on the body and may be completely healed, the surface, especially in the thickest portion, being covered with a scaly horny material, and these areas tend to crack open from time to time. In other instances, even after many years, there may be one or more chronic ulcerated areas on the most contracted portion of the scar which have never healed, and sometimes malignant degeneration may take place in these areas.

Contracted scars often seriously interfere with function and in the growing period check development or distort the involved portion of the bony framework. If they occur after the growing period has passed, then the lack of function caused by the scar contracture on such bones as the humerus or femur will sometimes cause atrophy from disuse.

These scars may be very extensive, and it would be poor surgical judgment in many instances to attempt complete excision because of the impossibility of obtaining sufficient skin to cover the defect made by the excision. In these cases the use of relaxation incisions is the method of choice as the relaxed scar between the incisions, when it changes its character, can be utilized in the final healing.

Unstable scars are those which usually follow extensive loss of the whole thickness of the skin and are most frequently found in cases in which the tissue losses involve the entire circumference of a limb or a large area over the vault of the cranium. These are in most instances too extensive to consider complete excision. The healing in the majority of cases has been by cicatrization, but sometimes the condition follows inadequate or unsuccessful grafting.

The scars are paper thin and are very unstable and may be entirely healed one day and, without apparent cause or following very slight trauma, on the day following may ulcerate in many places. The history is slow healing and then breakdown, and this may go on for years, during which time the patient may be completely incapacitated.

The first paper on the use of relaxation incisions followed by skin grafting in the treatment of unstable scars was published by J. S. Davis in 1917. It has been my experience that this is the only satisfactory method of dealing with this type of scar.

The method is as follows: The incisions should be marked out and should extend the entire length of the scar into the normal skin above and below it and should expose normal tissue even if necessary to go through the deep fascia. Many of these unstable scars are on legs and arms, and the incisions in these cases should not be made immediately over bone. For a leg or an arm or thigh, three incisions running parallel to the length of the limb are usually sufficient. The incisions may or may not go through the ulcerated areas. After the relaxation incisions have been made, the ulcers on the scar tissue between the incisions rapidly heal, and the scar itself changes its characteristics and becomes stable and strong. The wounds made by the incisions may be grafted immediately if the tissues are ready for grafting; otherwise after a few days, when the granulations have formed, the grafting may be done. I use small deep grafts or thick Ollier-Thiersch (split) grafts for grafting the relaxation defects, depending on the conditions.

Keloidal Scars.—It is difficult to differentiate the thickened, hard, red, tender, itching painful type of keloidal scar, which not infrequently follows burns, from a true keloid, and doubtless many of them are true keloids. Be that as it may, this type of scar sometimes follows burns, particularly those caused by chemicals, and it is a particularly difficult type to treat. Up to this time no specific treatment has been devised. Sometimes carefully given x-ray or radium therapy will blanch out and soften these scars and make them more comfortable, but frequently this type of treatment is unsatisfactory. These scars are often found on the backs of the hands, on the ears, on the cheeks and on the neck, the chest and the trunk. They usually follow burns which have destroyed the full thickness of the skin and which have been slow in healing. Why they occur in some burns and not in others, or why they occur in some areas on the same patient and not on others, although the healing has apparently been the same, I do not know. If the keloidal scars are not causing loss of function, time and plenty of it should be allowed to elapse before attempting any operative procedure.

In keloidal scars of reasonable size, for years I have been giving preliminary irradiation and then by the process of gradual partial excision removed the scar, keeping the sutures always in the scar area and in time finishing up with a comparatively narrow scar. Irradiation is also given each time after the sutures have been removed. Whether the preliminary irradiation does any good or not is a matter of question, but I have continued to use the method with fair satisfaction. In large areas on the face and hands excision with skin grafting or flap shifting may be necessary, but the results cannot be counted on. Complete excision with closure is usually followed in the true burn keloid by a bigger and better keloid. Removal by the endotherm followed by irradiation is sometimes done, and successes have been reported. Capillary drainage is usually unsuccessful. In fact, there is no completely satisfactory treatment of this type of scar.

REGIONS

As burn scars and deformities are found on all parts of the body, it might be helpful to consider different regions and briefly to mention methods which might be useful in the treatment of some of the lesions in these regions. As these scars may vary in each case and in each location, the methods are offered simply as suggestions, as each case must be studied out individually as to the best method of repair. In all of these operative cases much help can be obtained by the proper use of suitable immobilizing dressings and appliances, which should secure the part in the desired position in comfort and at rest.

Head.—Scalp: Burn scars of the scalp are at times very difficult to deal with. If the scar involves a large part of the scalp, is thin, is unstable and is tightly stretched on the skull, sometimes "tunnel grafts" of whole thickness or split thickness skin are effective in starting lines of stable skin. At other times relaxation incisions, with grafting of the defects thus made, promise the best result; in other instances removal of the scar with skin grafting, either split or whole thickness, depending on the conditions. When the scar involves only a portion of the scalp and a considerable amount of hair bearing skin remains, it is often possible to shift pedicled flaps of this hairy skin into strategic areas of the scar and thus make it easier to cover the hairless scar with a better arrangement of the hair.

In the midst of extensive old burn scars of the scalp, masses of closely adherent necrotic bone may be found. In these cases the bone should be removed down to normal bone or, if it includes both tables, down to the dura, and then the repair should be made. A slower method is to bore numerous holes through the bone to allow the formation of granulations and then, when the granulations have formed, to graft.

Forehead: Contracted burn scars of the forehead, with or without scalp involvement, will often cause abnormal raising of the eybrows and even of the eyelids themselves. In order to overcome this, a relaxation incision completely through the scar is made at the selected level transversely across the forehead from one temporal region to the other, the tissues are loosened and into the defect thus made a single whole thickness graft or thick split graft is sutured. In suitable cases the scar may be completely excised and the defect filled by a whole thickness graft or a thick split graft. If a scar in the temporal regions is hairless and unsightly, a flap of hair-bearing skin may be brought forward successfully from the scalp back of the ear to relieve conspicuous baldness in front of the ear.

Eyelids: Frequently ectropion of one or both eyelids, on one or both eyes, due to burn scar contractures occurs. In my experience, thin hairless whole thickness grafts are to be preferred, either from the normal upper lid, from the inner side of the upper arm or from the prepuce. Thick split grafts may be used, however. Adhesions should be made between the lids at several points to put them on the stretch before the grafts are sutured into position. Sometimes a flap from the temporal region or forehead is to be preferred for the repair of the lower lid. Eyebrows and eyelashes are often destroyed by burns and cause pronounced disfigurement. After the contractions are relieved these can be replaced by transplanting free grafts or pedicled flaps of hair-bearing skin by special technics. The complete restoration of eyelids and also the formation of sockets for artificial eyes is necessary in certain severe burns, and this may be accomplished by the use of suitable flaps and grafts.

Ears: Burn scars of the ears vary greatly. The cartilaginous framework may be practically intact and covered with a thin adherent scar. In other instances there may be every grade of cartilage destruction. Sometimes the lobule of the ear is fused with the scar on the adjacent portion of the cheek. The cartilaginous framework may be completely embedded in scar and closely adherent to the skull. In some instances simple relaxation with Z-plasties or skin grafting may be all that is required, but in others the complete reconstruction of the external ear is required, with cartilage transplantation, skin grafting and flap shifting as may be necessary in each case. Keloidal scars are not uncommon on ears and, after considerable time has elapsed without improvement, should be excised and accurately grafted with split thickness grafts.

Cheeks: Contracted burn scars of the cheeks are frequently found, and often the scar will involve the eyelids and mouth as well. In repairing such deformities the contracted scars must be completely removed in order to relieve the contractures, and the repair made by means of large whole thickness grafts or of flaps from a distant part or by the rotation of skin from the neighborhood if such skin is not infiltrated with scar. Usually when these contracted scars are excised there is a defect of varying depth left and it is inadvisable to use a split graft, as it is not thick enough. Sometimes the whole cheek must be reconstructed, and in these cases a lining must be provided for the flap with which it is done.

Nose: Many deformities of the nose result from burns, and the repair presents a considerable problem, as frequently the skin of the forehead and adjacent cheeks is also involved in the scar. In many instances a forehead flap, either lined or unlined as may be necessary, presents the best means of making the repair, as the skin of the forehead matches the nose in color quite well. Sometimes a flap from the arm is prepared and transferred, or a flap from the abdominal wall is grown onto the hand or wrist and then brought up to the nose. When flaps are unnecessary I frequently use a free graft from the skin on the back of the ear, as this matches in color better than the skin from other portions of the body. Cartilage may also be necessary in repairing deformities of the nose due to burns, and this material may be autogenous rib cartilage, which is to be preferred, or preserved icebox cartilage may prove useful. The cartilage may be implanted into the flap some time before it is turned down on to the nose, or it may be put in after the flap has grown into its new position.

Mouth: The most common deformity of the mouth due to scar contracture is ectropion of the lower lip, and this is usually associated with burn contractures involving the chin and neck. The relief of this type of contracture calls for either whole thickness grafting or, in suitable cases, thick split grafts or flap shifting. Another deformity caused by scar contracture is the so-called "pucker string contracture" around the mouth. When the patient opens the mouth there may be one or two or even three lines of scar pull running from the nasolabial folds on each side downward and across the chin, and frequently this scar also involves the upper lip. The best procedure to relieve this condition is by Z-plastics at strategic points. Another deformity of the mouth due to burn scar contracture is microstomia. In some instances the opening between the lips has contracted down to pencil point size, and the problem of feeding the patient is a serious one. In these cases the opening is enlarged along the normal lip level to a little more than normal mouth size, the mucous membrane is sewed to the skin or remains of the vermilion border, and the angle of the mouth on each side is made with a flap of skin or mucous membrane.

In cases in which the burn has destroyed the angle of the mouth on one side and the adjacent portion of the cheek and there is a contracted scar, it is neces-

sary to reconstruct that portion of the cheek with a lined flap and incidentally to make that side of the mouth of normal size. Sometimes it is necessary to reconstruct both lips as well as the soft parts of the chin. In such cases lined flaps must be brought in to furnish the required tissue. Scar contractures involving the angles of the mouth, displacing them either too high or too low, may be corrected by Z-plastics.

Remarkable illustrations of the use of double pedicled flaps of scalp in the repair of burn defects of the face have been shown, but to my mind in most instances the procedure is poorly thought out.

Neck.—Burn contractures of the neck are quite common. They may be massive and obliterate the entire contour of the neck and chin, or they may be scar bands or bridles. Frequently the angles of the mouth, the chin and the lower lip are also involved in these scars. In the massive type the scar should be excised as thoroughly as possible, the head extended and the defect filled with a whole thickness graft, a thick split graft or with a flap, often from the back. Sometimes a broad double pedicled flap may be slid up from the lower part of the neck or the upper part of the chest. It is necessary sometimes in these cases to relieve the condition in stages. In the scar band type, Z-plastics offer the best solution, and by the use of this method skin grafting or flap shifting may be avoided.

Trunk.—Burn scars and contractures are quite common on the trunk and vary greatly in their type. The extensive contracted scar which involves the anterior part of the chest and abdominal wall frequently prevents the patient from standing erect. The shoulders may be drawn toward each other, the breasts may be drawn close together, and the patient is held in a round shouldered position. In these cases the problem is not the removal of all the scar area, which in most instances is impossible (although some of the most objectionable areas may be excised), but to produce relaxation so that the body may assume an erect position without hindrance. Relaxation incisions should be made where necessary and the defects grafted with small deep grafts or any other type of graft selected by the surgeon, a considerable portion of the scar being utilized in the final repair. If the scar is comparatively small it may be either completely excised and the wound closed or excised with grafting, or, in suitable instances, gradual partial excision is the method of choice. It is not unusual to have a scar drawing the breasts toward each other. In some of these and in other areas, Z-plastics are effective. We quite often see keloidal scars on the back, the chest and trunk, and these should be treated by methods already mentioned. Sometimes unstable scars may be found on either the front or the back of the trunk, and in these cases relaxation incisions with grafting is the method of choice.

Upper Extremity.—Axilla: Frequently associated with burn scars of the trunk one finds the axillary regions also involved in the scar contractures. The involvement of the axilla may vary between a shortening of the anterior or posterior axillary fold to complete obliteration of the axilla and sometimes the fusion of the arm to the chest wall. When these adhesions are of long duration, separation of the arm from the chest wall must be done carefully as the humerus, through atrophy of disuse, may become brittle and, if moved too rapidly or without great care, may be fractured by the manipulation.

In the reconstruction of the axilla, small deep grafts should not ordinarily be used, but either large split grafts or whole thickness grafts or, if suitable adjacent tissue is available, pedicled flaps should be used. Tubed flaps are also very useful in certain cases. In certain webs involving the axilla, Z-plastics are of great use.

Arms and Hands: Many burn contractures are found on the arms and hands. The joints may be involved and immobilized in abnormal positions. The contractures may be as constricting bands or grooves in the midst of reasonably good skin, or the whole extremity may be involved and function completely lost. Many of the contractures around joints cause flexion deformities, and on the hands hyperextension with subluxation is often seen. Around joints the scar must be removed and replaced by a flap or graft as seems best. All types of flaps may be used. On hands, one frequently finds the part literally "frozen," there being practically no voluntary motion of any kind possible. Sometimes dense keloid growths will form on the hands. All of these problems are difficult to overcome. Excision with replacement with flaps of various kinds or with whole thickness grafts or thick split grafts must be done. Special splints designed for the special cases are of great assistance and should be used when required. Fingers and adjacent portions of the hand may be completely destroyed by the original lesion and the stump covered by a thin, painful scar. In such cases excision and covering with a flap or graft is indicated and, if possible, the readjustment of the stump for practical use.

Unstable scars are not unusual on the arms and forearms. Here, as always where this type of scar presents, thorough relaxation incisions with skin grafting is the method of choice. In relaxing scar bands on the entire upper extremity, including the hand, Z-plastics are of great use.

On the palms after excision of scar, whole thickness grafts or thick split grafts should be used. When flaps are used, care should be taken that there is only sufficient subcutaneous fat for the purpose required and that the flap fits fairly accurately.

Sometimes the reconstruction of tendons is necessary in old burn scars on the hands. Skin and subcutaneous tissue must first be supplied and then, through this, tendon reconstruction may be made in suitable cases.

Lower Extremities.—Burn scars and numerous consequent deformities are often found on the lower extremities. These contractures may cause flexion of the thigh on the abdomen and the leg on the thigh and often cause complete loss of function. In some of these cases areas are found in the midst of dense scar which have never completely healed. Often the scar involvement will extend from the chin to the knees. I have found that relaxation incisions with grafting is by far the most useful and effective method of handling these scars. One should gain as much as one can at the first operation and later do further relaxation and more grafting. In this way the best ultimate results may be obtained. In dense old burn contractures in the popliteal space it is advisable to divide the scar transversely as deeply as is safe, then to apply traction by an orthopedic appliance and gradually stretch out the tissues, and then make the repair with a graft or flap. In this way the muscles, vessels and nerves which have contracted on account of position are gradually stretched without injury. Unstable scars on the lower extremity are also treated by long relaxa-

tion incisions with grafting. Contractures around the ankle and foot are treated by excision and grafting, and suitable splints are also helpful. Sometimes there is an extensive tight scar on the anterior surface of the knee which prevents flexion. This scar must be excised if reasonably small and replaced by a graft or flap, or relaxation incisions must be made and then grafting done. Thick grafts or flaps should be used in areas where there is weight bearing and continuous trauma, such as the sole of the foot.

SUMMARY

My purpose in this paper is to present a brief consideration of the late plastic care of burn scars and deformities.

All types of scars may follow the healing of burns. These scars contract and cause an infinite variety of deformities.

The vast majority of these deformities must be treated by operative methods.

The most important of these methods are excision with closure by sutures; excision with lateral relaxation incisions and closure followed by skin grafting of the relaxation defects; gradual partial excision with closure; relaxation incisions in the scar itself with skin grafting; the use of Z-plastics; the use of skin grafts of various types; the use of pedicled flaps.

In many instances it is impossible to excise the scar completely on account of its size and location. In these cases the utilization of scar itself or scar infiltrated tissue in making the final repair is essential.

In utilizing the scar itself in making the repair, three methods will be found useful, either alone or in combination. These are gradual partial excision with closure; relaxation incisions in the scar itself with skin grafting; Z-plastics.

Each of these maneuvers is of great value, and none of them have been employed as generally as they should be.

As a matter of fact, the use of scar tissue in making the final repair of an extensive burn scar with deformity has been greatly neglected, and this important source of material has in many instances been eliminated even when donor sites for grafts have been scarce.

In some clinics, where skin grafts are necessary in relieving scar deformities, the split graft, cut with the Padgett-Hood dermatome, has superseded all other types of grafts for all purposes, although frequently whole thickness grafts and grafts of other types would be more suitable.

All types of pedicled flaps may have to be used in relieving the deformities caused by burn scars, but, as in the use of grafts, there is no one type which should be used to the exclusion of all others.

Contracted scars may seriously interfere with function and during the growing period may check bone growth or distort the bony framework.

Each case must be studied out as an individual problem, as there are seldom two with exactly the same involvement.

None of the operative maneuvers found most useful in dealing with old burn scars and deformities are new. There is no single procedure which is the method of choice and which is applicable for the relief of all types of cases.

The application of adequate special splints following operation in many of these cases is very helpful.

It is to be hoped that, with the more general use of the latest methods of treating burns, which stress the prevention of infection and where early skin grafting is employed, deformities will become less frequent.

The operative care of burn scars and the deformities caused by them should be in the hands of surgeons who have a thorough knowledge of how to deal with scar or scar infiltrated tissues and who understand the possibilities of their utilization.

701 Cathedral Street.

Clinical Notes, Suggestions and New Instruments

STABILITY OF PENICILLIN SOLUTIONS AT ROOM AND INCUBATOR TEMPERATURES

WILLIAM M. M. KIRBY, M.D., SAN FRANCISCO

The impression that penicillin solutions deteriorate rapidly except when kept under 5 C. has arisen as a result of experiments performed with relatively crude preparations. Fleming,[1] in his original paper, reported that boiling for an hour greatly reduced the potency of penicillin and that autoclaving at 115 C. for twenty minutes completely destroyed it. Fisher,[2] also working with crude penicillin, noted complete loss of potency after twenty-four to forty-eight hours in the incubator or four to six days at room temperature. Aqueous solutions of the barium salt were found by Abraham and Chain [3] to retain their activity at 2 C. for several months, at 25 C. for several weeks and at 37 C. for twenty-four hours.

Penicillin preparations now being supplied by commercial houses are accompanied by instructions to keep the solutions in the refrigerator (under 5 C.) except when they are being administered to the patient.* Uncertainty as to how strictly these precautions should be adhered to has led to a variety of technics of administration. In some instances intermittent intravenous injections are given as frequently as every forty-five minutes to avoid the deterioration that might occur with the continuous intravenous drip. At the Mayo Clinic [4] a liter bottle containing a twelve hours supply of penicillin is left at the patient's bedside while it runs slowly into the vein. At Stanford University Hospitals for many months no more than 150 cc. was put into the cylinder at the patient's bedside, and this was replenished at hourly intervals to keep the solution continually cold.

Because of the technical difficulties connected with these procedures and the lack of information concerning the stability of the relatively highly purified preparations now available, the following studies of penicillin deterioration were undertaken:

EXPERIMENTAL

Preparations of the sodium salt of penicillin from eight commercial houses (Merck, Lederle, Abbott, Pfizer, Squibb, Cutter, Parke-Davis, Lilly) were diluted to 1.0 unit per cubic centimeter in isotonic solution of sodium chloride. Each lot was divided into three portions, one of which was kept at room temperature (about 22 C.), one in the incubator (37 C.) and one in the refrigerator (2 C.). Daily titrations of the activity of the various preparations were made in the following manner: 0.5 cc. of the penicillin solution was added to 9.5 cc.

Miss Mary Beach gave technical assistance.

From the Department of Medicine,* Stanford University School of Medicine.

The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for experimental investigations recommended by the Committee on Chemotherapeutics and Other Agents of the National Research Council.

1. Fleming, A.: On the Antibacterial Action of Cultures of a Penicillin, with Special Reference to Their Use in the Isolation of B. influenzae, Brit. J. Exper. Path. **10**: 226, 1929.

2. Fisher, A. M.: The Antibacterial Properties of Crude Penicillin, Bull. Johns Hopkins Hosp. **73**: 343 (Nov.) 1943.

3. Abraham, E. P., and Chain, E.: Purification and Some Physical and Chemical Properties of Penicillin, Brit. J. Exper. Path. **23**: 103 (June) 1942.

4. Herrell, W. E.: The Clinical Use of Penicillin, an Antibacterial Agent of Biologic Origin, J. A. M. A. **124**: 622 (March 4) 1944.

of nutrient broth (a final dilution of 0.05 unit per cubic centimeter) containing a constant inoculum of a hemolytic streptococcus (Lancefield group A), and turbidity was measured with a Coleman universal spectrophotometer at the end of twenty-four hours. This concentration of penicillin was selected because it allowed moderate growth of the organism; i. e., any deterioration would be indicated by increased growth. In addition, at the end of a week the potency of the solutions was measured by a modification of the dilution method of Rammelkamp.

RESULTS

There was no evidence of deterioration of any of the preparations at room temperature during the first seven days. Beginning with the eighth day, slight deterioration was noted with some lots, although most retained their full potency for ten to twelve days. Thereafter, potency declined gradually over a period of weeks or months. Considerable activity was still present in a solution of penicillin in saline solution, 100 units per cubic centimeter, which had stood in an open bottle at room temperature for over five months. Evaporation prevented accurate measurement of potency in terms of the original dilution. In the incubator no deterioration was detected before the fourth day, but thereafter it was fairly rapid, all activity having disappeared usually after the eighth day.

TABLE 1.—*Optical Densities (Turbidity) in a Typical Experiment*

	2 C.		22 C.		37 C.	
Day	Initial	24 Hrs.	Initial	24 Hrs.	Initial	24 Hrs.
1	0.18	0.25	....	....	....	....
4	0.18	0.26	0.18	0.25	0.18	0.24
8	0.18	0.24	0.18	0.25	0.18	0.26
Control	0.18	1.0	0.18	1.0	0.18	1.0

There was no deterioration after four days in the incubator and eight days at room temperature.

TABLE 2.—*Results in a Typical Experiment with the Modified Rammelkamp Dilution Test After Eight Days*

Freshly diluted (0.1 unit per cc.)....	0	0	0	0	+	+	+	+	+	+
2 C.	0	0	0	0	+	+	+	+	+	+
22 C.	0	0	0	0	+	+	+	+	+	+
37 C.	+	+	+	+	+	+	+	+	+	+

Table 1 shows optical densities (turbidity) in a typical experiment when the solutions were first prepared and at the end of four and eight days.

Table 2 shows the results in a typical experiment with the modified Rammelkamp dilution test, performed with freshly diluted penicillin and with the solutions which had stood at 2 C., 22 C. and 37 C. for eight days. The end point was the same at 2 C. and 22 C. as it was with the freshly diluted penicillin, indicating that no deterioration had occurred in the refrigerator or at room temperature. At 37 C. no penicillin activity remained.

COMMENT

These observations indicate that preparations of the sodium salt of penicillin now being furnished by commercial houses are much more heat stable than the earlier, cruder lots. This is of considerable clinical significance, and it will become even more important when penicillin is available to the general practitioner who will be using it in the home, where there are often no facilities for keeping solutions at 2 C. In this clinic the procedure has been modified so that frequently twenty-four hours' supply is kept at room temperature when using the continuous intravenous drip. It would certainly seem safe, in temperate climates, to mix two or three days' supply, either for intermittent intramuscular injection or for continuous intravenous drip, and leave it at the patient's bedside. Even in the summer a full day's supply could be left at room temperature with a considerable margin of safety.

SUMMARY

Solutions of current commercial preparations of the sodium salt of penicillin have been found to maintain their full potency for a minimum of four days in the incubator and seven days at room temperature, in contrast to the relative instability of the early cruder lots. These observations indicate that one or two days' supply can be mixed and left at the patient's bedside without danger of deterioration.

CASE OF STAPHYLOCOCCIC SEPTICEMIA TREATED WITH PENICILLIN

RAYMOND J. BOLLER, M.D., Resident Physician, Medical Division, ST. VINCENT'S HOSPITAL, NEW YORK

A married woman, Italian, aged 25, came into St. Vincent's Hospital, New York, on Dec. 29, 1943 complaining of fever and general aches and pains. Two weeks prior to admission the patient, whose last menstrual period was on October 15, went to a midwife, who inserted a rubber tube into the uterus in an attempt at abortion. She bled vaginally quite profusely at first but only spotted during the three or four days prior to her admission. One week prior to admission the patient developed fever, a nonproductive cough and general aches and pains. These symptoms increased in intensity and forced her to seek hospitalization.

Her past history was essentially negative. She had two full term normal spontaneous deliveries, three and one-half years and one year before.

On admission the patient appeared well developed and well nourished. She weighed 110 pounds (50 Kg.) and was in acute distress. Positive findings consisted of slight injection of the conjunctivas and a moderately inflamed pharynx. The heart and lungs were essentially normal; the blood pressure was 120/80.

X-ray examination of the chest revealed a heart measuring 11.5 cm., which was within normal limits, and congestion involving the root areas, midparenchyma and bases of both lungs. The admission urine had a specific gravity of 1.007, albumin 2 plus and 5 to 10 white blood cells per high power field with occasional squamous cells and rare granular casts.

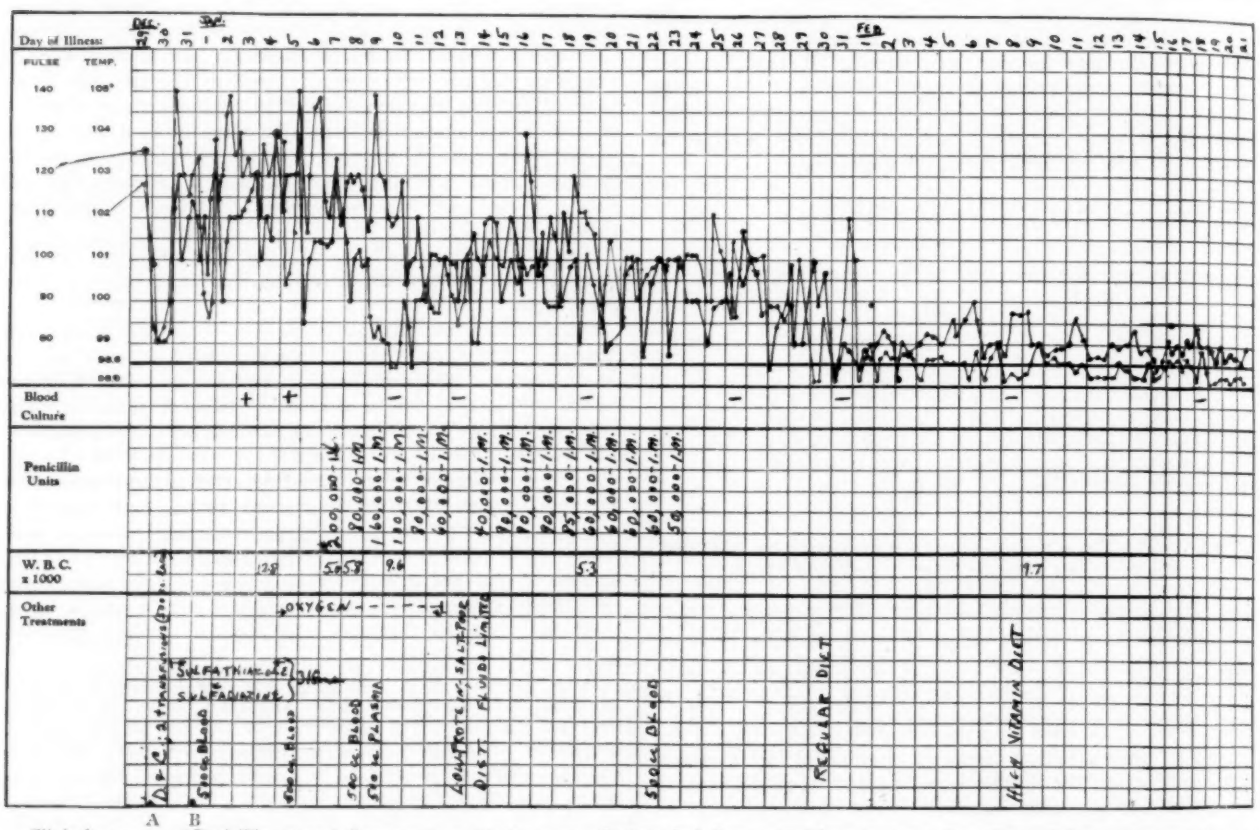
At this time the diagnosis was upper respiratory infection and threatened abortion.

A few hours after admission the patient had a profuse vaginal hemorrhage composed of clots and tissue. She became cold and clammy. The pulse rose to 140 and was thready in character. The blood pressure dropped to 98/60. A sterile vaginal examination revealed a parous perineum and a cervix which was dilated one and a half fingerbreadths. The uterus was enlarged and soft and anteriorly placed. The adnexa were clear. The patient was given morphine and an infusion of 5 per cent dextrose in saline solution. In addition, ergonovine maleate in $\frac{1}{320}$ grain (0.2 mg.) doses was administered intramuscularly. A transfusion of 500 cc. of whole blood was given and the patient was taken to the operating room on December 30, where a therapeutic dilation and curettage under intravenous anesthesia with pentothal sodium was performed. The specimen consisted of a spongy mass weighing 21 Gm. Microscopic examination showed this tissue to be placenta.

The patient was in shock immediately postoperatively and 500 cc. of whole blood was given intravenously. During the following day, December 31, she received 1,500 cc. of 5 per cent dextrose and 1,500 cc. of 10 per cent dextrose in isotonic solution of sodium chloride by vein and another 500 cc. of whole blood. Sulfathiazole was administered orally, and after 8 to 10 Gm., sulfadiazine with sodium bicarbonate was substituted. The temperature was 102 F. on admission. It dropped to a normal level immediately after the dilation and curretage, only to rise to 105 F. on the first postoperative day. It fluctuated between 103 F. and 104 F. for five days postoperatively, despite chemotherapy. Clinically, during this period,

Dr. Thomas A. Martin, director of the medical service, gave capable guidance. Drs. Baldwin and Jost, attending physicians of the medical service, and Dr. Joseph E. Corr, attending gynecologist, and Dr. Thomas E. Cavanaugh Jr., resident physician of the gynecologic service, cooperated.

the patient was very toxic. The respirations were much increased and labored (40 to 60 per minute). She was extremely pale, and there was slight icterus of the scleras. The face was slightly swollen. She complained, however, only of pain in the left flank. The heart sounds at the base were just audible but were of fair quality at the apex, where a soft systolic murmur was heard. The rhythm was regular, the rate very rapid. There was dulness in both lower lung fields posteriorly, with patchy areas of bronchial breathing and bronchophony. Crepitant rales were also heard here. Abdominal examination revealed a slight distention, with pronounced tenderness and spasm in the left flank and costovertebral angle. The spleen was palpable 2 fingerbreadths below the left costal margin and was exquisitely tender. The liver was questionably palpable. Pelvic examination was essentially negative, except for a slight foul discharge.



A B

Clinical course. * Penicillin started January 8 at 12:20 a. m. Patient had four convulsions in seven hour interval between permission and delivery of drug. *A*, 1,500 cc. of 5 per cent dextrose in saline solution intravenously. *B*, 1,500 cc. of 5 per cent and 1,500 cc. of 10 per cent dextrose in saline solution intravenously.

X-ray examination of the chest on Jan. 3, 1944 revealed evidence of consolidation of both lung fields extending out from the central areas.

Blood cultures taken on January 3 and 5 were positive for Staphylococcus aureus. Urinalyses taken during this period (all catheterized) showed persistent albuminuria, a trace to 4 plus, occasional to many red blood cells per high power field, specific gravity 1.007 to 1.012, and occasional epithelial cells. The blood was of type A, Rh positive, red blood cells numbered 3,120,000, hemoglobin was 75 per cent, 13 Gm., white blood cells numbered 12,800 with neutrophils 82 per cent, lymphocytes 18 per cent and mononuclears 2 per cent. The blood Kahn reaction was negative. The icterus index January 2 was 11. The blood sulfathiazole level was 12.8 January 7. On the 5th the blood urea was 13, creatinine 1.6. On the 7th the white blood cells numbered 5,050, with 85 per cent neutrophils and 13 per cent lymphocytes.

The diagnoses established at this time were Staphylococcus aureus septicemia, bilateral bronchopneumonia, peritonitis and toxic hepatitis.

Chemotherapy was stopped on January 5 and oxygen was administered, as well as another transfusion of 500 cc. of whole blood. During the following two days the patient's temperature ranged between 101 and 105 F. and was spiking in character. She was no longer in shock. The blood pressure was 100/60. The pulse rate was 120 and no longer thready. On the afternoon of January 7 the patient's arms, anterior chest and lower eyelids were covered with petechiae, which appeared in showers. The eyegrounds did not show any embolic phenomena. On that day she became irrational and had four convulsions lasting about one minute each and occurring at two to three hour intervals. Sedation was obtained with soluble barbital, and hypertonic dextrose solution was administered intravenously.

About half an hour before the fourth convulsion, penicillin was started intravenously (100,000 units in 1,000 cc. of cooled isotonic solution of sodium chloride). This was followed by another 100,000 units of penicillin administered in the same manner. Both doses were given at a rate of 40 drops per minute. This was followed by 1,500 cc. of 10 per cent dextrose in isotonic solution of sodium chloride intravenously. Penicillin was continued intramuscularly, 20,000 units in 4 cc. of cooled isotonic solution of sodium chloride every three hours. Another transfusion of 500 cc. of whole blood was given on January 8 and 500 cc. of blood plasma was administered on the 9th. The temperature dropped to a normal level on the 9th but the pulse rate remained considerably elevated. On the 10th penicillin was reduced to 10,000 units intramuscularly every three hours. On the 12th the patient showed improvement clinically, becoming quite rational, and was now able to take fluids by mouth. The petechiae faded within forty-eight hours. The signs in her lung fields diminished, and oxygen was no longer necessary. The abdominal distention decreased; the liver was no longer palpable, but the spleen was still two fingerbreadths below the costal margin and tender. Unfortunately the supply of penicillin was finished on the 12th. At this time a peripheral and sacral edema developed and now a diastolic gallop was heard for the first time along the left sternal border.

On January 10 the white blood cells numbered 9,600, with 84 per cent polymorphonuclears and 13 per cent lymphocytes.

Blood urea nitrogen was 77, creatinine 1.8 on the 11th. Blood cultures on the 9th and 13th were negative. The icterus index was 11.3, serum bilirubin 1.3, blood protein 6.8 per cent, cephalin flocculation test 2 plus. January 12 urinalysis showed 4 plus albumin, specific gravity 1.020, urobilinogen positive in 1:20 dilution, negative in 1:40. An electrocardiogram revealed regular sinus rhythm, low voltage in all complexes, inverted T_1: interpreted as indicating myocardial damage. Chest x-ray examination on the 13th revealed congestion and exudative infiltration in both central zones and bases. No pleural fluid was seen; there was no change in the cardiac outline.

The patient was placed on a low protein, salt free diet on the 13th and fluids were restricted to the preceding day's output. Only on January 10 did the urinary output fall below 1,000 cc. On the 14th a new supply of penicillin was received, and this was given intramuscularly 15,000 units in 3 cc. of cooled isotonic solution of sodium chloride every four hours for five days and continued for five more days at the rate of 10,000 units every four hours. This course was completed on January 23. Another transfusion of 500 cc. of whole blood was given on the 22d. The edema had almost completely subsided by this time except for a slight amount over the dorsal surface of the feet. The blood urea had fallen to 11. The abdomen was now soft and the spleen, while still palpable, was only slightly tender. There were still signs of a resolving pneumonia in both lower lobes.

The picture was complicated on January 22, when the patient complained of moderate pain in the left chest in the posterior axillary line. This pain was aggravated by inspiration. Examination revealed flatness in the extreme left base with diminished bronchial breathing and diminished tactile and vocal fremitus in the same area. An x-ray examination of the chest on the 24th showed evidence of a small amount of fluid at the left base and a slight increase in the size of the cardiac shadow. On the 26th a thoracentesis was performed for diagnostic purposes and 200 cc. of straw colored fluid was withdrawn. This was later found to be sterile.

The gallop rhythm disappeared on the 29th, but a soft to and fro friction rub was heard along the left sternal border for two days, February 3 to 5. At the same time it was noted by x-ray examination that the heart measured approximately 15 cm. in its transverse axis.

During this time the temperature ranged between 98 and 101 F. The patient improved from day to day and the blood cultures were persistently sterile. On February 1 for the first time the temperature was normal the entire day and remained so thereafter. She was allowed to sit up on the 10th. Physical examination and radiography revealed the heart contour to be normal in size and both lung fields clear and completely expanded. The abdomen was soft and the spleen was just palpable but not tender. The patient's appetite was good and the urinary output was normal. The electrocardiogram of February 14 showed all T waves to be upright and the QRS complexes to be normal except for slight slurring of the R wave in leads 1 and 3. The patient had a normal menstrual period starting February 15, which lasted four days. Pelvic examination revealed uterus anterior and a small cervical os with a slight erosion. The adnexal regions were slightly thickened and tender. When the patient was sufficiently strong, having been up and about eleven days without complaint, she was discharged on February 21 to a convalescent home. She will be followed closely in the medical and gynecology clinics for a period of six months or more.

Final laboratory examinations revealed white blood cells 9,700 with 64 per cent polymorphonuclears, 30 per cent lymphocytes, 4 per cent eosinophils and 2 per cent mononuclears. Hemoglobin was 62 per cent, 8.9 Gm. Red blood cells numbered 3,140,000; the color index was 0.95. The specific gravity of the urine was 1.006, with 30 to 40 white blood cells per high power field (noncatheterized), 1 plus albumin and many squamous cells.

COMMENT

This case presented a staphylococcic septicemia arising from a uterine focus, which up to the present day has been a fatal one. Additional interest was found in the development and treatment of the different complications which occurred. These were, in the order of their occurrence, peritonitis, toxic hepatitis, bilateral bronchopneumonia, acute glomerulonephritis, toxic myocarditis, left pleural effusion and pericarditis with effusion.

The question arises as to the role of penicillin in the treatment. There is no doubt in the minds of the men who followed the case that without penicillin it would have been fatal. It is felt that the patient was moribund when penicillin was started. The rapid decline of the temperature in the first twenty-four to forty-eight hours following the initial dose of penicillin, accompanied by the seven negative blood cultures and the subjective as well as the objective improvement of the patient, were directly attributed to the drug. The low grade fever which persisted for three weeks later was due to the multiple complications resulting from the profound sepsis that was present before the blood stream could be made sterile. In this type of infection one must expect to find, as we did, almost every system involved. The course of penicillin was prolonged not because we thought that the drug would have a direct effect on each site of trouble but because we felt that penicillin would maintain a sterile blood medium and thus prevent further spread of infection should the organisms persist in embolizing from the primary focus. At the same time the already involved sites, i. e. lungs, kidneys and heart, were treated as indicated.

Besides appreciating the effectiveness of penicillin, we also learned, and it cannot be stressed too strongly, that supplemental therapy in these cases is absolutely essential for successful management. Optimal nutrition and the use of all supportive means at our disposal play a most important role. This patient had six transfusions of whole blood and one of plasma, as well as several infusions of dextrose in saline solution intravenously and oxygen when needed. A thoracentesis was performed also in an effort to prevent further complications. Liver, iron, vitamins and diets according to the condition of the patient were used for the purpose of keeping up the body's natural defenses.

The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutics and other agents of the National Research Council.

Council on Foods and Nutrition

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS AND NUTRITION OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

GEORGE K. ANDERSON, M.D., Secretary.

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

H. J. Heinz Company, Pittsburgh.

HEINZ CHOPPED GREEN BEANS.

Analysis (submitted by manufacturer).—Total solids 8.25%, total sugar as sucrose 1.82%, reducing sugar as invert 1.74%, acidity as citric 0.09%, protein (N × 6.25) 1.34%, fat (ether extract) 0.22%, crude fiber 0.93%, ash 1.15%, salt 0.71%, total carbohydrates other than crude fiber, by difference 2.61%, calcium 419 mg. per kilogram, phosphorus 447 mg. per kilogram, iron 5.3 mg. per kilogram, copper 4.9 mg. per kilogram.

Calories.—0.25 per gram; 7 per ounce.

Vitamins.—Vitamin A, 620 I. U/100 Gm.
Thiamine, 0.037 mg./100 Gm.
Riboflavin, 0.084 mg./100 Gm.
Ascorbic acid, 8.6 mg./100 Gm.

H. J. Heinz Company, Pittsburgh.

HEINZ STRAINED BEEF BROTH WITH BEEF AND BARLEY.

Analysis (submitted by manufacturer).—Total solids 13.49%, total sugar as sucrose 1.10%, acidity as citric 0.11%, protein (N × 6.25) 2.48%, fat (by acid hydrolysis) 1.57%, crude fiber 0.31%, ash 0.87%, salt 0.48%, total carbohydrates other than crude fiber, by difference 8.15%, calcium 210.0 mg. per kilogram, phosphorus 388.7 mg. per kilogram, iron 8.4 mg. per kilogram, copper 1.5 mg. per kilogram.

Calories.—0.57 per gram; 16 per ounce.

Vitamins.—Vitamin A, 74 I. U./100 Gm.
Thiamine, 0.032 mg./100 Gm.
Niacin, 1.53 mg./100 Gm.
Riboflavin, 0.035 mg./100 Gm.
Ascorbic acid, 1.7 mg./100 Gm.

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SATURDAY, JULY 1, 1944

SYLVATIC PLAGUE

The role of fleas in the transmission of Pasteurella pestis was not established experimentally until 1898, when Simond [1] succeeded in transmitting the disease from a rat dying of plague to a healthy rat by means of fleas. He thought that the infection resulted from inoculation of infective feces into the bite wound. Ten years later Verjbitski [2] observed that many species of rat fleas do not bite human beings but that they do cause fecal contamination of clothing or may be crushed and their intestinal contents rubbed into skin punctures or abrasions. This early theory of fecal transmission was first challenged by Walker,[3] who showed that when tuberculin, vaccine lymph or staphylococcus emulsion is rubbed over recent flea bites inoculation does not follow.

Bacot and Martin [4] found that two species of rat fleas were able to transmit plague during the act of sucking under conditions that precluded possible infection with dejecta. Considerable prolification of the plague bacillus was detected in the digestive tract of many fleas, often sufficient to cause a blocking of the lower end of the esophagus. As a result of this blockade, regurgitation of micro-organisms takes place when the fleas attempt to feed on a new host. Bacot and Martin believed that only fleas suffering from this temporary obstruction at the entrance of the stomach are responsible for insect transmission of this disease.

Douglas and Wheeler [5] of the Hooper Institute, University of California, have recently repeated this work, using Diamanus montanus, one of the commoner fleas on California ground squirrels, as vectors, with Xanthopsylla cheopis, the classic rat flea, as control. The white mouse was selected as the experimental animal in place of the guinea pig, used by most previous investigators. The white mouse was found to be susceptible to intraperitoneal inoculation with a relatively small number of Pasteurella pestis organisms. So inoculated they develop a relatively high bacteremia, distributed evenly throughout the peripheral blood stream. The degree of bacteremia was determined for each animal by microscope counts and plate counts, the average obtained by the two methods seldom differing by more than 15 per cent.

A number of previously unfed, laboratory reared fleas were placed on a plague infected mouse whose Pasteurella pestis bacteremia had been previously determined. Five minutes after having been fed, each flea was thoroughly emulsified in a known volume of sterile distilled water. The resulting aqueous extract was plated on agar and the viable Pasteurella pestis count determined. From this count the volume of the blood meal was readily calculated, which volume usually varied from 0.015 cmm. to 0.050 cmm., with an average of 0.030 cmm. per flea. The average number of organisms ingested with each meal was 300,000 when the fleas fed on a mouse with 2,000,000 Pasteurella pestis organisms per cubic millimeter of its circulating blood.

The Indian Plague Commission [6] first pointed out that a certain proportion of fleas are able to clear themselves of the ingested bacilli. The rate of this autopurification was determined by the California investigators. By the end of forty-eight hours 40 per cent of the plate counts showed a considerable multiplication of the ingested organisms in the rat flea, while 60 per cent of the plates showed a slight reduction in the viable count. Only 2 per cent of the rat fleas showed complete autopurification. In the squirrel flea multiplication of the ingested bacteria was demonstrated in but 20 per cent of the cases, with complete autopurification within twenty-four hours in 60 per cent of the insects. Confirming this relative rate of autopurification, it was found that after a single infectious meal and subsequent daily feeding on normal mice 24 per cent of the squirrel fleas and but 4 per cent of the rat fleas had lost their power to transfer the infection. The mechanism of this autopurification has not yet been fully determined.

Serial microsections showed that within two days after ingesting septicemic blood plague bacilli may be seen in small clumps in the stomachs of squirrel fleas. By the tenth day both stomach and preventriculus are packed solidly with a bacterial mass now extending into the esophagus. In this condition the flea becomes infectious. The period of infectivity, however, is usually short. If allowed to feed once each day, the flea will transmit the infection two or three times but will almost invariably die on the fifth day, death presumably being due to starvation. In the rat flea development of a similar esophageal blockade usually required sixteen days, the flea usually dying four days later.

1. Simond, P. L.: Ann. Inst. Pasteur **12**: 625, 1898.
2. Verjbitski, D. T.: J. Hyg. **8**: 162, 1908.
3. Walker, C.: J. Hyg. **11**: 290, 1911.
4. Bacot, A. W., and Martin, C. J.: J. Hyg. **13**: 423, 1913.
5. Douglas, J. R., and Wheeler, C. M.: J. Infect. Dis. **72**: 18, 1943.
6. Reports of Plague Investigations in India, J. Hyg. **7**: 395, 1907; **8**: 260, 1908.

Daily plate culture made of the vial of each flea showed that only 56 per cent of the daily fecal samples from the squirrel flea and but 25 per cent of the samples from the rat flea contain viable Pasteurella pestis organisms. The average daily count in these positive cultures was 200 bacilli, with the number frequently falling to less than 10. Even assuming that the fecal bacteria are of full virulence, this number is usually too small to incite an infection in a guinea pig by the cutaneous or subcutaneous route. Moreover, Bacot and Martin found that these fecal bacteria are usually of low virulence since they are more readily phagocytized than control bacteria from the blood stream of plague infected rats.

Demonstration that within twenty-four hours 60 per cent of the infected squirrel fleas are able to digest or otherwise free their alimentary canal of Pasteurella pestis, and that the remaining 40 per cent become infectious only between the tenth and fifteenth day is contrary to prevailing clinical belief based on the historical theory of fecal transmission.

CHEMOTHERAPY OF MURINE TYPHUS

Since the beginning of the present war the possibility of successful chemotherapy of rickettsial infection has been subjected to intensive clinical research. Various sulfonamides [1] have been tried with alleged success in cases of human typhus. Their usefulness, however, appears to be limited to the treatment of pneumonia and other secondary bacterial invaders. Neoarsphenamine in metaphen,[2] atabrine-plasmochin and atabrine-calcium mixtures [3] have also been given with allegedly favorable results. The available evidence, however, is too scanty for a definite conclusion.

In order to make possible a study of a larger number of therapeutic agents with adequate controls, Peterson [4] of the International Health Division of the Rockefeller Foundation has begun a study of the chemotherapy of murine typhus. This is a rickettsial infection of mice first described about four years ago by Gildermeister.[5] Yolk sac cultures of the infectious agent usually contain a sufficiently large number of rickettsias to kill mice by toxic action within two to eight hours after intraperitoneal injection. By reducing the dose, however, the mice are not affected by the toxin but die four to five days later of rickettsial infection. Peterson selected as his standard dose 0.5 cc. of a 1 : 100 dilution of murine infected yolk sac injected intraperitoneally. This usually killed from 80 to 100 per cent of all control mice. A group of 20 mice was usually used in testing each chemotherapeutic agent, with an equal number of untreated controls. Feeding of each test drug was usually begun about twenty-four hours before intraperitoneal inoculation. With other groups the therapeutic feeding was begun at the time of the inoculation or delayed from twenty-four to seventy-two hours after inoculation.

Among the drugs thus far tested, toluidine blue has given the most promising results. In a typical experiment 40 mice were fed fox chow containing 1.5 per cent toluidine blue. Twenty-four hours later these mice together with 20 normally fed controls were injected intraperitoneally with the standard dose of murine infected yolk sac. The mortality was 80 per cent among the untreated controls but only 29 per cent in the group fed toluidine blue. In other groups a 90 per cent control mortality was reduced to 25 per cent by feeding 0.5 per cent toluidine blue beginning at the time of the infection, with a reduction to 50 per cent in a parallel group in which the therapeutic feeding was not begun till twenty-four hours after inoculation. If the therapeutic feeding was delayed till the forty-eighth hour, toluidine blue was without demonstrable effects. In partial explanation of these results it was found that 1 : 10,000 toluidine blue had a definite in vitro neutralizing action on the yolk sac toxin and also reduced the infectious titer.

Less effective therapeutic activity was noted with "forbisen." With this product it was necessary to increase the concentration to 2.5 per cent in the diet in order to produce significant results. In a typical experiment approximately 60 per cent of the infected mice survived when fed 2.5 per cent forbisen, while 100 per cent of the control mice died of the infection.

The discovery of two effective chemotherapeutic agents against rickettsial infections is promising, stimulating hope of an eventual successful chemotherapy of human typhus.

1. Wohlrab, V. W.: Klin. Wchnschr. **31**: 445, 1942.
2. Baker, G. E.: Ann. Int. Med. **17**: 247, 1942.
3. van Meerendonk, Piet: Deutscher Militärarzt **7**: 283, 541, 1942.
4. Peterson, O. L.: Proc. Soc. Exper. Biol. & Med. **55**: 155, 1944.
5. Gildermeister, E., and Haagen, E.: Deutsche med. Wchnschr., **66**: 878, 1940

PHANTOM LIMBS

"Phantom limb" was described as early as 1551 by Ambroise Paré and later by S. Weir Mitchell. Revival of interest now is due to war casualties and to realization that phantom limb is a common occurrence after amputations. Leriche observed its occurrence after amputations in 98 per cent, Pitres in 97 per cent, Weir Mitchell in 95 per cent and Foerster in 100 per cent. Riddoch [1] states that it is usual for the patient to experience sensations following amputation, at least for a time, as if the limb were still present, and the proportion is greater with upper than with lower limbs. These sensations may be painless or painful but are always more or less abnormal. Bilateral amputations may be followed by bilateral phantom hands or feet; or one or both may be absent; or one may be painless

1. Riddoch, George: Phantom Limbs and Body Shape, Brain **64**: 197 (Dec.) 1941.

and the other painful. Intractable pain in the phantom limb, while relatively rare, may present a formidable therapeutic problem. The pain appears about the same time as the phantom, immediately or some time after the operation, and is felt mainly in the hand or foot. In the hand pain is referred chiefly to the wrist, palm, knuckles and tips of the fingers and thumb, and in the foot to the instep, heels and toes. If there had been a painful wound in the forearm or leg before the amputation, the pain may seem to persist in the same area in the phantom as if the sore were still present. The sensations experienced in the phantom are those of warmth, itching, burning, throbbing, piercing, cramping, sticking or cutting. The pain is usually continuous and subject to exacerbations. There may be a sensation of the phantom limb being crushed or torn. Many patients ultimately become narcotic addicts or are driven to suicide. The posture of the phantom part is almost invariably that of the limb before amputation, especially if pain was antecedent to operation.

The supposition that the condition is psychogenic in nature and that the patient is a psychoneurotic has not been borne out by clinical observations. Early observations, particularly those of Weir Mitchell, pointed to the important role played by the peripheral nerve stumps. Mitchell observed that faradization of the brachial plexus in a patient long after amputation reproduced the sensation of hand which was bent and hurt the patient. He concluded that irritation of sensory trunks may produce impressions of muscular motion in the sensorium. According to Riddoch the phantom sensation is a projection arising from the postcentral sensory association areas in the cerebral cortex. He attaches considerable importance to the condition of the stump, especially of its peripheral part. Certain features of the stump, which may appear sooner or later after the operation, influence the late development of pain in the absent part. End bulbs or neuromas are invariably present in amputation stumps. They may be small and benign or abnormally large and tender. The nerve trunks may become affected and be the seat of interstitial neuritis. The worst cases of painful phantom limbs tend to become associated with these abnormalities in the stump. Any stimulus, physical or emotional, that can evoke pain is usually effective for both stump and phantom limb. Then cramplike rigidity of the phantom hand and fingers most often forms the most constant background of pain. Pain in the phantom is due to excessive stimulation of the nerves in the stump and results in extended representation of the absent limb in the phantom and limits voluntary movement of the phantom only because voluntary effort aggravates the pain. The prevailing posture of the phantom is that of the part at the time of amputation. "It is as if the postural model had become frozen when normal stimulation ceased."

The part played by the autonomic nervous system was emphasized by Leriche and by Livingston.[2] Repeated injections of sympathetic ganglions produced in some of their cases of painful phantom limb beneficial effects which persisted for weeks or months. Experimental evidence is against the opinion that pain impulses from the periphery traverse the sympathetic ganglions. They probably follow the mixed nerves to enter the spinal cord by the posterior roots of the brachial plexus. The best that can be said for this therapy is that the symptoms may be temporarily alleviated in a number of instances, and that occasionally the relief afforded by such an injection persists for a long time (Livingston). Resection of painful neuromas, in the opinion of Leriche and of Bailey and Moersch,[3] never produces lasting results, as the neuroma invariably reforms. White [4] feels that the removal of a palpable painful neuroma is worth a single trial, provided the pain disappears when the neuroma is injected with procaine. Repeated excisions of neuromas, neurectomies, reamputations at higher levels and resection of posterior roots consistently fail and should not be resorted to. Chordotomy is more effective than section of the posterior roots. Bailey and Moersch state, however, that this operation has not afforded relief in cases observed by them.

The observation by Head and Holmes that a contralateral cerebral lesion abolished the phantom at once in a patient observed by them called attention to the role of the higher centers in the mechanism of this phenomenon. Gutierrez-Mahoney [5] argued that, since the peripheral pathways are multiple, it would be simpler to interrupt the chain at the intermediate level by removal of the corresponding part of the postcentral cortex. He has performed this operation on a man aged 40 who got his right hand caught in a circular saw, which amputated the terminal phalanx of the middle finger and the terminal and half of the middle phalanx of the ring finger. Immediately after operation he was conscious of the presence of the amputated fingers. These phantoms were extremely painful. Gutierrez-Mahoney exposed under local anesthesia the left parietal lobe, determined by stimulation the area corresponding to the middle and ring fingers of the right hand, and excised this area by subpial resection. There was an immediate disappearance of the phantom fingers and the pain, which had not recurred two years after the operation. This new type of intervention may prove to be the solution of the problem of the intractable pain of the phantom limb.

2. Livingston, W. K.: Fantom Limb Pain: A Report of Ten Cases in Which It Was Treated by Injections of Procaine Hydrochloride Near the Thoracic Sympathetic Ganglions, Arch. Surg. **37**: 353 (Sept.) 1938.

3. Bailey, Allan A., and Moersch, Frederick P.: Phantom Limb, Canad. M. A. J. **45**: 37 (July) 1941.

4. White, James C.: Pain After Amputation and Its Treatment, J. A. M. A. **124**: 1030 (April 8) 1944.

5. de Gutierrez-Mahoney, C. G.: The Treatment of Painful Phantom Limb by Removal of Postcentral Cortex, J. Neurosurgery **1**: 156 (March) 1944.

Current Comment

IMMUNE SERUM GLOBULIN FOR MEASLES MADE AVAILABLE TO CIVILIANS

Elsewhere in this issue (page 638) appears an announcement relative to a plan adopted by the American Red Cross in cooperation with the armed forces and with various pharmaceutic manufacturers to make available at cost to the American people surplus immune serum globulin to be used for the prevention of measles. From its very inception this has been a fine example of efficient functioning of the democratic way of life. The research leading to the development of this product was carried out by the Plasma Fractionation Laboratory of the Harvard Medical School under Professor E. J. Cohn. The work, both laboratory and clinical, was supported by contracts from the Committee on Medical Research of the Office of Scientific Research and Development and with guidance by the committees of the Division of Medical Sciences of the National Research Council. The medical departments of the Army and Navy gave the product efficient trial in various installations. The quality and production are under control of the National Institute of Health. The blood was contributed by millions of American citizens in the depots established and maintained by the American Red Cross. Five pharmaceutic manufacturers processed the material and have agreed—since the blood is donated by the people—to make the product available through health departments at actual cost. No doubt many additional uses for surplus material from the blood thus procured will be developed. Already experimentation is turning to the surplus corpuscles and to other protein fractions. Eventually, no doubt, in the postwar period means will be found for adjusting the present tremendous program to peacetime civilian and military needs. The plan now established by the American Red Cross and the participating private agencies is highly commendable.

BAGASSE DISEASE OF THE LUNGS

Bagasse is the product remaining after the extraction of sugar from sugar cane. According to Sodeman and Pullen [1] this material is commonly baled and if not used immediately may remain exposed in the field for some months before being converted, by processing, into insulating and acoustic board. Workers employed in the breaking of these bales sometimes acquire a respiratory illness, 7 cases of which have been previously reported. This paper presents 11 additional case reports with resultant clarification of the clinical picture. Cough and dyspnea were early and important symptoms. Dyspnea occurred in all cases and was almost invariably the chief complaint. It appeared suddenly and became sufficiently severe to force the patient to rest. Cough occurred in all instances, and hemoptysis was noted four times; it lasted only a few days and the amount varied but never exceeded a teaspoon daily. In general, the sputum which was raised in 9 instances was scanty and mucoid. Pharyngeal irritation was noted in 3 cases; pleural pain was not observed, but retrosternal pain was associated with dyspnea and cough. Night sweats, chills and fever were not infrequent. Intermittent fever with temperatures ranging from 99.8 to 101.2 F. was observed and persisted up to three or four weeks. In 3 cases fever was not noted. Tachycardia occurred in 4 cases. Weakness over a long period was characteristic. Examination of the chest revealed nothing spectacular, although impaired resonance and diminished breath sounds were noted in 4 instances. Roentgen examination of the chest showed in all cases a miliary mottling throughout both lungs, most dense in the hilar areas. Leukocyte counts varied from 7,400 to 20,600, and 10 of the 11 patients had counts above 10,000. In 7 cases the differential count revealed polymorphonuclear leukocytosis. Treatment consisted of rest in bed during the acute stages of the disease and palliative medication. The hospital stay varied from nine to ninety-three days. Needle biopsy specimens were obtained from the lung of 1 patient in the sixth and seventh weeks of the disease. Microscopic studies of these specimens indicated the presence of bagasse dust with a severe and unusual cellular reaction, the nature of which has not yet been established. The condition described is a true industrial disease.

1. Sodeman, W. A., and Pullen, R. L.: Bagasse Disease of the Lungs, Arch. Int. Med. **73**: 365 (May) 1944.

ACADEMIC FREEDOM AND MEDICAL EDUCATION

If recent proposals to supply federal funds in large quantities to educational institutions after the war are adopted, the effect will influence the future of medicine for decades. F. R. Moulton, writing in the May bulletin of the American Association for the Advancement of Science, raises some important points bearing on this problem as far as it relates to higher education in general and to academic freedom in particular. Many of his points are especially cogent for medical education. "Naturally an institution facing an acute emergency," Moulton says, "will not be unduly strict in grading students on whose return its future seems to depend. At the end of the second year (of federal support) a continuing emergency will call for a third year, and then the colleges and universities will have been added to the long list of pressure groups receiving sustenance from Washington." Many questions would be better raised now rather than later. If medical students receive federal largess, will not the government be entitled to some service in return, and if so what? Should the young doctor spend one year, two years or more in repaying his debt to the state? Is the medical school which is dependent for its existence on federal funds obligated to the federal government? And if so in what way must its debt be paid?

MEDICINE AND THE WAR

ARMY

CONSCIENTIOUS OBJECTORS CONTRACT DISEASE TO HELP ARMY FIGHT INFECTIONS

To aid the Army in its battle against influenza and pneumonia, three groups of conscientious objectors confined in camps in the United States volunteered to be infected with the virus of these diseases, according to a report made to the Preventive Medicine Service of the Office of the Surgeon General and announced recently by the War Department. A total of 94 of the 122 men involved became ill, some of them seriously, but all recovered. The report was made by Dr. Francis G. Blake of Yale University, president of the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army. It covered research done in the last year by two of the board's component commissions, that on influenza headed by Dr. Thomas Francis Jr. of the University of Michigan, Ann Arbor, and that on acute respiratory diseases headed by Dr. John H. Dingle of Fort Bragg, N. C.

The influenza work was done at the camp at Wellston, Mich., by Dr. Jonas E. Salk and Dr. Thomas Francis of the University of Michigan and by Dr. Paul R. Cannon, Dr. Francis B. Gordon and Dr. Clayton G. Loosli of the University of Chicago. Two tests were made. In the first, 79 volunteers served in three groups. One group of 26 inhaled a spray of plain salt water (unknowingly) and then a spray of a laboratory strain of active type A influenza virus. This was a control group. A second group of 27 men received a spray of human serum and then the active virus. A third group of 26 received the serum, but the virus given them had been inactivated with ultraviolet rays. Within eighteen to twenty-four hours all 53 men in the first two groups had influenza, recovering without complications in two to four days. A second test was set up in which more potent serum, taken from the sickest men of the first group, was used on 31 other volunteers. Greater concentrations of serum over longer periods of inhalation were used on these men and the serum was inhaled after, as well as before, the virus. A weaker virus also was used. Sixteen of the volunteers got serum and virus and fifteen got salt solution and virus. Again all who got the active virus got influenza. However, the occurrence of high fever, 103 F. or better, was much lower in the second group. It was concluded by the investigators that vaccination offers more hope of protection against influenza than passive immunity through inhaled serum.

Working with Dr. Theodore J. Abernethy, Dr. Alexander D. Langmuir and Dr. Charles H. Rammelkamp of the Respiratory Disease Commission, Dr. Dingle's study was carried on at the camp at Gatlinburg, Tenn., where 45 to 50 men volunteered to permit their noses and throats to be sprayed with washings from the noses of 7 soldiers at Fort Bragg who had primary atypical pneumonia, which does not respond to treatment with serums and sulfonamides. Twelve of the healthiest and soundest volunteers were selected for the experiment. Respiratory illness, varying in clinical manifestations and severity, developed in 10 of the 12 volunteers. Three of them were quite ill and went to the hospital, but all recovered quickly and satisfactorily. This was the first time that primary atypical pneumonia had been so transmitted, and it makes important the study of the test material for the purpose of isolating the infective agent—work which is now in progress.

The employment of conscientious objectors as test subjects was done with the approval of the Selective Service System, Major Gen. Norman T. Kirk, U. S. Army, the Surgeon General and the National Service Board of Religious Objectors, Washington, D. C. It was done on an entirely volunteer basis after the purposes, reason and dangers of the experiments had been fully explained.

EVACUATION HOSPITALS COMMENDED

Three evacuation hospitals, the 56th, 93d and 95th, of the Fifth Army in Italy were commended by Lieut. Gen. Mark W. Clark, U. S. Army, Fifth Army commander, for outstanding courage under fire. The 56th Evacuation Hospital was cited for the period January 26 through February 29. Personnel of the 56th landed at the Allied Fifth Army's Anzio beachhead under enemy aircraft bombardment, set up the hospital and began receiving and caring for patients before it was fully organized. During the shelling of an adjacent area in which there was another hospital, the staff aided in evacuating patients and casualties. When antipersonnel bombs were dropped in the hospital area, members continued their treatment of patients and prevented panic. This was done despite bombing, shelling and falling flak, with attendants working long hours without rest.

The 93d Evacuation Hospital landed at an Italian town on January 23 and set up buildings despite intense enemy bombings. The town was under constant aerial and artillery attack, and personnel worked under the most difficult circumstances. Later the unit moved into tents in an open field.

The personnel of the 95th Evacuation Hospital displayed remarkable endurance and ability throughout the bombing, which caused numerous casualties among personnel and patients and destroyed vital equipment. From January 23 to February 11 the hospital was set up in tents and cared for battle casualties while the beachhead was subjected to aerial bombardment and shelling by enemy long range guns.

REDUCE MORTALITY RATE OF CEREBROSPINAL MENINGITIS

The mortality rate from cerebrospinal meningitis in the Army has been reduced from 93.2 per cent in the Civil War to less than 3 per cent in the present war, through the use of small amounts of sulfadiazine, according to a recent announcement made by the War Department. A research group, working under the Preventive Medicine Service of the Office of the Surgeon General, discovered that the meningococcus which causes the disease is highly susceptible to small amounts of sulfadiazine, ranging from 2 to 6 Gm. The bacterium causing the infection is present in the throats or noses of most persons, it was discovered, and tests indicated that as little as 2 Gm. of the drug will eliminate these bacteria for a period of several weeks. According to Dr. John J. Phair of the School of Hygiene and Public Health at Johns Hopkins University, who heads the commission on meningitis, this fact makes it possible to head off epidemics by the occasional administration of sulfadiazine to all members of a military unit, especially under such circumstances as embarkation on a troop ship. The new discovery was revealed in a report of the commission's work by Dr. Francis G. Blake of Yale University, president of the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army. Dr. Phair stated that of 100 soldiers tested in experimental work at Fort Meade, Maryland, 92 showed presence of the germs on several occasions during the test period of sixty-eight days. None were sick, apparently because the majority have an immunity to the infection. It is only when large numbers of men, some immune, some not, are thrown together, as in military camps, that epidemics occur.

In the armies of 1917 and 1918 there were 5,839 cases of cerebrospinal meningitis reported, with 2,279 deaths, a mortality rate of 39.2 per cent. Now with preventive medicine introducing new tactics and the sulfonamides providing a powerful weapon the current low incidence and low death rate in today's armies offer the possibility of complete defeat of the dread infection.

THE NEWTON D. BAKER GENERAL HOSPITAL

The Newton D. Baker General Hospital, near Martinsburg, W. Va., was formally dedicated June 9. The principal speakers at the ceremony were Major Gen. Norman T. Kirk, Surgeon General of the Army; Major Gen. James L. Collins, Columbus, Ohio, commanding general of the Fifth Service Command; John J. Cornwell, Baltimore, governor of West Virginia during the first world war, and Jennings Randolph, member of Congress from the second West Virginia district. The hospital had as its honored guest at the dedication Mrs. Newton D. Baker, Cleveland, widow of Mr. Baker, in whose honor the hospital was named. Mr. Baker was Secretary of War during the first world war.

In addition to medical and surgical activities the hospital provides extensive recreational, educational, physical reconditioning and occupational therapy programs. A movie theater and reconditioning section are being constructed now, the latter to house patients who have recovered sufficiently to leave the hospital but who are not fit to return to active duty. The hospital is intended to care for men from its particular section of the country requiring prolonged hospitalization and to act as a clearing station for men direct from overseas. Patients requiring specialized treatment are sent to designated hospitals.

Col. E. L. Cook is the commanding officer of the hospital, and other members of the staff at present are as follows:

Lieut. Col. D. H. Poer, Atlanta, Ga., chief of surgical service.
Major Carter Smith, Atlanta, Ga., chief of medical service.
Lieut. Col. Robert Hammersberg, LaCrosse, Wis., chief of dental service.
Capt. Helene F. Sorensen, Minneapolis, principal chief nurse.
Lieut. Col. Thomas M. Arnett, Clarksburg, W. Va., hospital executive officer.
Major Howard A. Swart, Welch, W. Va.
Major Fred W. Alexander, New Philadelphia, Ohio.
Capt. Donald E. Barker, Chippewa Falls, Wis.
Capt. Bradford Bissell, Ithaca, N. Y.
Capt. Andrew R. Coppola, Brooklyn.
Capt. D. D. Dougherty, Hoboken, N. J.
Capt. Vernon E. Duckwall, Van Wert, Ohio.
Major Sidney A. Fox, New York.
Capt. Ira F. Hartman, Buckhannon, W. Va.
1st Lieut. B. L. Harbin, Rome, Ga.
Major Charles S. Hertz, Allentown, Pa.
Major William J. Horger, East Liverpool, Ohio.
Capt. Irving G. Klaus, Philadelphia.
Capt. John T. McGreer, Fremont, Neb.
Capt. Joseph J. Michaels, Newton Center, Mass.
Major George M. Miller, Woodbridge, N. J.
Capt. William R. Minnich, Atlanta, Ga.
1st Lieut. George P. Perakos, New Britain, Conn.
Capt. Glenn G. Perry, High Point, N. C.
Capt. Paul W. Purcell, Seymour, Ill.
Capt. Clara Raven, Scranton, Pa.
1st Lieut. Joseph L. Rankin, Atlanta, Ga.
Capt. Michael J. Romano, Yonkers, N. Y.
Capt. C. R. Sullivan Jr., Pittsfield, Mass.
Capt. Weir M. Tucker, Richmond, Va.
Capt. Harry C. Vesley, Peoria, Ill.
Capt. Bayard R. Vincent, Wilmington, Del.
Capt. J. W. Shuman Jr., Beverly Hills, Calif.
Capt. William R. Sneed, Corsicana, Texas.
Major Foster M. Wilson, Greenville, Ky.
1st Lieut. Samuel B. Fowler, Hendersonville, Tenn.
1st Lieut. Robert D. Estrom, Fergus Falls, Minn.

PAY FOR STUDENT NURSES

In Bulletin No. 8, issued by the War Department May 19, the following Executive Order (No. 9439) is published for the information and guidance of all concerned:

"By virtue of and pursuant to the authority vested in me by section 11 (b) of the act of June 15, 1943 (Public Law 74, 78th Congress), as amended by the act of March 4, 1944 (Public Law 248, 78th Congress), student nurses transferred to any federal hospital in the continental United States, exclusive of Alaska, pursuant to subsection (e) and (f) of section 2 of the said act of June 15, 1943, shall be paid a stipend at the monthly rate of sixty dollars for that period of training requisite to graduation: Provided, that the period of training in no case shall extend beyond the period required for graduation by the institution from which the student nurse was transferred but may be terminated at any time prior thereto as the interests of the service may require."

HOLD MEETING AT ASHFORD GENERAL HOSPITAL

A meeting was held at Ashford General Hospital, White Sulphur Springs, W. Va., May 31 in conjunction with the meeting of the American Orthopedic Association held at Hot Springs, Va., June 1-3. Approximately 90 members and their guests attended. Among those were Major Gen. Norman T. Kirk, the Surgeon General, Brig. Gen. Fred W. Rankin, chief consultant in surgery, Capt. C. M. Shaar, chief of surgical service, Philadelphia Naval Hospital, and a number of other officers in the armed forces. A clinical program was presented by members of the staff of Ashford General Hospital as follows:

Varus Deformity in Lower Third Humerus Fractures, Capt. James W. Riley.
Elective Knee Surgery: End Results, Capt. C. W. Camalier Jr.
Analysis of Bone Grafts, Capt. Paul M. Rieth.
Congenital Anomalies of Lower Back, Major R. C. Pendergrass.
Skin Grafts: Orthopedic Conditions, Lieut. R. A. Murray.
Peripheral Nerve Injuries, Major George L. Maltby.
Demonstration of Cases, Major Robert P. Kelly.
Diagnostic Methods: Peripheral Vascular Disorders, Capt. J. W. Kahn.
Demonstrations of Aneurysms, Lieut. Col. D. C. Elkin.

Papers were discussed by General Kirk, General Rankin, Dr. A. Bruce Gill, president of the American Orthopedic Association, and others. Ward rounds were held in orthopedic wards, and the hospital as a whole was inspected.

ARMY AWARDS AND COMMENDATIONS

Captain Isidore Brill

The Army Air Medal was recently awarded to Capt. Isidore Brill for "meritorious achievement while participating in an aerial flight in the African theater on June 29, 1943." Dr. Brill was practicing medicine in Champaign, Ill., at the time he entered the service in the Air Transport Command of the Army in August 1942.

Captain Theodore E. Woodward

Capt. Theodore E. Woodward has been cited for his work in typhus at the Pasteur Institute in Casablanca, Morocco, and has been made a member of the United States Typhus Commission working in Africa and Italy. The citation read as follows: "Captain Woodward went to Africa as a member of a general laboratory unit of the first American contingent. On arriving in Morocco, Captain Woodward landed in the midst of a typhus epidemic. Having had special training and previous experience with typhus, he immediately realized the danger to American troops. He arranged for assignment to the Pasteur Institute at Casablanca, where he instituted cooperative studies and investigations with the French scientists, the nature of which for the time must remain a secret but which are of great value to our program of controlling typhus fever." Dr. Woodward entered the service Feb. 15, 1941 after graduating from Harvard Medical School, Boston, in 1938.

Captain Harold C. Shulman

Two official commendations have been awarded to Capt. Harold C. Shulman for outstanding services, devotion to duty and professional skill in the Southwest Pacific. The first commendation, for outstanding conduct during the week of Jan. 20 to 27, 1943, reads "When the Panettiere section was suddenly filled with 140 badly injured men from Guadalcanal, in addition to his other duties as chief anesthetist to the hospital Captain Shulman voluntarily acted as ward officer and worked continuously and untiringly for eighty-six hours until the wounds of every man were dressed and those men who were in need of immediate surgery were operated on. Through his skill and willingness to stay at the side of his patients at every opportunity, the lives of four men with sucking wounds of the chest were saved, and by means of his knowledge of anesthesia and through his help the surgeons were able to operate continuously in a scientific manner."

The second citation reads "The devotion to duty and professional skill of Capt. Harold C. Shulman . . . during the Cherry Blossom operations has been worthy of high commendation. This officer contributed materially to the establishment of specialized surgical facilities in this division and as a result

aided greatly in maintaining the morale and fighting strength of its men. It is with great pleasure that I express my appreciation of his service and commend him for his performance of duty." Dr. Shulman graduated from Syracuse University College of Medicine in 1935 and entered the service in May 1942.

Colonel Irwin Bradfield Smock

The Legion of Merit Award was recently presented to Col. Irwin B. Smock. The citation accompanying the award read as follows: "From Feb. 18 to April 25, 1942, as medical inspector, Hawaiian Department, he rendered meritorious acts of extraordinary fidelity and service in establishing and coordinating the operation of expanded medical department installations in the Territory of Hawaii. Through his able planning and supervision of construction, the military hospitalization program on the island of Hawaii was greatly expedited, and installations were prepared for immediate occupancy and use when hospital units arrived to furnish hospitalization for incoming tactical units." Dr. Smock graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1912 and entered the service April 27, 1938.

Lieutenant James B. Ashley

Posthumous award of the Bronze Star medal has been made to Lieut. James B. Ashley. He was killed in action at Guadalcanal, Jan. 13, 1943. The citation accompanying the award states that "he placed the welfare of those injured above his own safety and gave his life in the pursuit of his duties." Dr. Ashley graduated from the University of Michigan Medical School, Ann Arbor, in 1941 and entered the service July 1, 1942. His father, Lieut. Col. L. Byron Ashley, is now with the Harper Hospital Unit in Italy.

FROSTBITE AMONG AMERICAN COMBAT AIRMEN GREATLY REDUCED

Brig. Gen. Malcolm C. Grow, surgeon chief of the Air Service Command, recently announced that frostbite among American combat airmen has been reduced 1,500 per cent in one year. The chief factors in this tremendous reduction are improved electrically heated flying clothing, face masks, gloves and the new windows for waist gunners aboard fortresses and liberators. General Grow stated that "in April 1943 60 men out of every 10,000 flying operationally suffered frostbite, which in many cases resulted in amputations and permanent injuries to the victims. Today, thanks principally to the waist window, which reduces wind blast 90 per cent, that figure has been slashed to 4 in 10,000." Of 131,000 combat crewmen flying in operations during April 1944, only 56 were hospitalized for frostbite.

SPECIALIZED WOMEN WANTED FOR ARMY

An opportunity is now open for certain specially trained women to serve with the Medical Department of the Army in the Women's Auxiliary Corps. The following are some of the positions open to qualified women who may be enlisted for service with the Medical Department: pharmacists and pharmacists' aides, orthopedic mechanics, laboratory technicians, x-ray technicians, lip reading technicians, braille technicians (instructors), occupational therapists and aides, dental laboratory and hygienist technicians and dental aides. Interested persons should apply to the local officer of the Procurement Service or to the WAC recruiting office.

MISCELLANEOUS

SURPLUS IMMUNE SERUM GLOBULIN FOR MEASLES (NORMAL SERUM GAMMA GLOBULIN [HUMAN])

Measles Immune Serum Globulin (Normal Serum Gamma Globulin [Human]) Declared to Be in Excess of the Requirements for the Armed Forces Now Released for Civilian Use

Immune serum globulin (normal serum gamma globulin [human]) is a by-product in the processing of a blood substitute; namely, serum albumin. It is derived from the blood contributed by our citizens through the American Red Cross. The laboratory and clinical research leading to its development were supported by the Committee on Medical Research of the O. S. R. D. and by the Division of Medical Sciences of the National Research Council. In processing the blood there is built up a surplus of immune serum globulin (normal serum gamma globulin [human]) beyond the needs of the armed forces. As far as is practicable it is desired that this surplus should be returned to civilian use. The processing of the serum globulin from the time it is separated from the albumin until it has been placed in the final container and tested for safety, purity, sterility and potency involves, however, a considerable processing expense. This expense is an unavoidable part of the processing and must be covered in some way before the globulin can be made available for civilian use. The method of meeting this charge is to be patterned after the procedure now used by the Army and the Navy for covering the cost of processing plasma and albumin; namely, having the cost assumed by the agency receiving and distributing the material. The plan proposed is as follows:

1. Under the existing contracts between the Navy and the several processing laboratories, the Navy has control over the disposition of the crude globulin fraction which is derived as a by-product from processing serum albumin. From time to time the Navy will declare as surplus any amounts of crude globulin which are not needed by the armed forces and will assign to the American Red Cross the disposition of these amounts.

2. The control of processing and the testing and release of the product should be, as under the Navy contracts with the several processing laboratories, by the Plasma Fractionation Laboratory of the Harvard Medical School until such time as the constancy of the product as produced by each commercial firm has been satisfactorily demonstrated. As this product is a biologic preparation, it must first be released by the National Institute of Health before the producing laboratories can supply it to the various agencies.

3. The American Red Cross will enter into an agreement with the several processing laboratories as to the delivery price f. o. b. the processing laboratory of a 5 cc. vial of the finished, refined and packaged concentrated globulin. This price is to be a cost price, based on the allowable factors necessary for processing this material without profit from the crude globulin state to its finished form.

4. Each vial shall bear the label required by the National Institute of Health for licensed products. Each cardboard container for individual packaging shall bear the same and also the following statement:

"This product was obtained from blood donated by volunteers through the American Red Cross for the armed forces. It is a by-product of serum albumin and is hereby returned through the American Red Cross for military or civilian use free of charge. The cost of processing, testing and packaging was paid by the agency distributing the product. The resale of this material is prohibited."

5. The American Red Cross will provide each processing laboratory with a list of participating agencies which are entitled to receive the immune serum globulin (normal serum gamma globulin [human]). The following agencies and they alone in the order of preference will be eligible:

(*a*) The armed forces of the United States.

(*b*) The American Red Cross, the United States Public Health Service, and any other agency of the U. S. government whose order for the product is approved by the Red Cross.

(*c*) State departments of health and those local health departments whose orders are approved by the Red Cross.

These departments may on request furnish immune serum globulin (normal serum gamma globulin [human]) to any

hospital within their jurisdiction at the cost to them. This will not constitute a resale of the product. The cost shall not be passed on to the patient, either directly or indirectly.

6. The American Red Cross makes this announcement simultaneously to the participating agencies and to the public, and it will be further disseminated through joint action with the Association of State and Territorial Health Officers.

7. Participating agencies may purchase as many 5 cc. vials of immune serum globulin (normal serum gamma globulin [human]) as they need. However, in order to insure equitable distribution with respect to these agencies and to the several laboratories, all requests for this material shall be filed with and approved by national headquarters of the American Red Cross. National headquarters, on the basis of the stocks of dried serum globulin available in the several laboratories and geographic consideration of conveniences and expense, and irrespective of the contract price, will in turn inform the requesting agency with which laboratory the order should be placed, and in this the decision of the Red Cross shall be final. The Red Cross will also send to the designated laboratory or laboratories a copy of its instructions to the requesting agency. The purchase price f. o. b. the laboratory, plus any shipping charges, shall be borne by the agency placing the order.

8. Each processing laboratory will provide the American Red Cross monthly with an inventory of the amount of dried and stored immune serum globulin (normal serum gamma globulin [human]) and the amount fully processed, tested, packaged and ready for distribution together with a report of the number of finished packages distributed during the previous month. In turn the American Red Cross will send to each laboratory monthly a compilation of said inventories and reports received from the laboratories.

9. Each agreement between the American Red Cross and the processing laboratories may be terminated by mutual consent or at the option of either party on the submission in writing of notice to such effect sixty days prior to such proposed termination. The disposition of any stock of serum globulin in any form remaining in the hands of such processing laboratory on such termination shall, for a period of six months after the effective date of termination, be subject to the control and direction of the American Red Cross in accordance with the provisions of this plan; thereafter, such remaining stocks may be disposed of by the processing laboratory at a price not to exceed the price agreed on plus reasonable costs of sale and distribution based on the previous year's experience of the processor in the sale and distribution of other biologic products.

CIVIL SERVICE COMMISSION'S CLEARANCE PROCEDURE FOR SENIOR CADET ASSIGNMENT

The U. S. Civil Service Commission recently established the following clearance procedure for senior cadets requesting appointment to one of the five federal services. This report was made to a representative of the Division of Nurse Education which administers the U. S. Cadet Nurse Corps under the United States Public Health Service. The commission acts only as a pool for the five federal hospital services—Army, Navy, U. S. Public Health Service, Veterans Administration and Indian Service—to clear applications of prospective senior cadets. A check is made by the commission to see that the school of nursing is approved by state boards of nurse examiners. Applications are then sorted according to the student's preference and are filed on cards. At present, representatives of each of the federal nursing services go to the Civil Service Commission headquarters to review applications of their service.

A cadet's eligibility is determined by the federal service to which she has applied. Each service makes its own selection, the scholastic standing of the cadet being a major deciding factor with each service in accepting the cadet's application.

Physical requirements regarding height, weight, teeth and vision also must be met. If a cadet nurse does not meet the requirements of her first choice her application is returned to the commission, where it is referred to the service of her second choice. Should the cadet's application not be accepted by any of the services, the School of Nursing is notified, and the application is returned to the Civil Service Commission stating the reason for rejection.

Miss Ruth A. Heintzelman was recently appointed nursing consultant, Medical Division, of the U. S. Civil Service Commission. She is also nursing consultant on the clearance of serior cadet nurses. As of May 1, 1944 the commission had processed approximately 3,000 applications. Out of this number approximately 2,000 had been turned over to the five federal services. The Army decided on 799, the Navy accepted 534, the U. S. Public Health Service accepted 21 and the Indian Service accepted 31.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, June 24, page 562)

MASSACHUSETTS

Union Hospital, Fall River. Capacity, 186; admissions, 3,829. Miss Jennie F. Smithies, R.N., Superintendent (2 interns, October 1).

MINNESOTA

Bethesda Hospital, St. Paul. Capacity, 180; admissions, 6,083. Rev. L. B. Benson, Superintendent (interns).

NEW YORK

Coney Island Hospital, Brooklyn. Capacity, 300; admissions, 5,611. Dr. Saul M. Penner, Superintendent (2 interns).

CIVILIAN AMBULANCE SERVICE

Civilian ambulance service may soon become serious, particularly in those sections of the country where bad roads are accelerating normal wear, members of the Ambulance Body Manufacturers' Industry Advisory Committee of the War Production Board informed officials of WPB's Automotive Division recently. A substantial need for ambulances in industrial plants already exists. Discussion of the possibility of manufacturing new ambulance bodies on used chassis led to the conclusion that such a program would be difficult in view of the acute shortage of used chassis, but industrial members expressed the belief that the conversion of used passenger cars into ambulances would be the only practicable way to ease the present shortage when conditions justified such a step. Discussing the relation of the ambulance industry to the automotive industry and preparation for the reconversion period, industrial members expressed the view that no independent planning was possible. Any ambulance plans must wait on the plans for the automotive industry as a whole, members of the committee said.

DRUG SUPPLY DEPOTS ESTABLISHED IN EIGHT MAJOR PORTS

The War Shipping Administration recently announced the establishment of drug supply depots in eight major ports, which will assure a supply of essential drugs for men in the American Merchant Marine. Supplies of penicillin, dried blood plasma, insecticides and quinine will be maintained in depots at the ports of New York, Portland, Ore., Seattle, New Orleans, Norfolk, Va., Baltimore, San Francisco and Philadelphia. This will enable the operators of all WSA owned or chartered vessels to maintain readily a supply of essential medicines as prescribed in the minimum drug list. Preparations such as these are not always available in quantity on the open market, and the cooperation of the War Production Board and the armed services was established in setting up the WSA depots. Supplies will be allocated from the depots to operators on an actual cost basis.

STATE MEDICAL OFFICERS OF SELECTIVE SERVICE SYSTEM HOLD MEETING

State medical officers of the Selective Service System opened a three day meeting June 5 at national headquarters. Major Gen. Lewis B. Hershey, director, delivered the address of welcome and Col. Leonard G. Rowntree, chief of the Medical Division, presided at the sessions which were devoted to discussions and reports on medical phases of administering the Selective Training and Service Act. Vice Admiral Ross T. McIntyre, Surgeon General of the Navy and chairman of the five man commission on physical standards, addressed the meeting Monday. Major Gen. Norman T. Kirk, Surgeon General of the Army, spoke Tuesday, and Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, spoke on Wednesday.

DEDICATE NEW NATIONAL INSTITUTE OF HEALTH IN HAVANA

On May 17, at the invitation of the Cuban government and Dr. Alberto Recio, the minister of health, Brig. Gen. James Stevens Simmons, chief, Preventive Medicine Service, Office of the Surgeon General, U. S. Army, visited Havana and took part in the dedication of the new National Institute of Health. During the ceremonies President Batista decorated General Simmons with the medal of the Carlos J. Finlay National Order of Merit in the grade of Gran Official. The President also sent by General Simmons to Major Gen. Norman T. Kirk, the Surgeon General of the Army, a certificate conferring the Carlos J. Finlay Order of Merit in the grade of Gran Cruz on the former American Yellow Fever Commission for its fundamental experimental work in Cuba on the etiology and transmission of yellow fever under the leadership of Major Walter Reed. The certificate will be preserved in the Army Medical Library in Washington.

MINNESOTA GRADUATES IN MEDICAL CORPS TO RECEIVE BULLETIN FREE

All graduates of the University of Minnesota Medical School who are officers in the medical corps of one of the services are eligible to receive, without charge, the Bulletin of the Minnesota Medical Foundation. The mailing list is known to be incomplete and to contain inaccurate addresses, especially as regards the Navy Medical Corps. All Minnesota graduates who are officers in the Army or Navy are invited to send their service address to the editor of the Bulletin, 132 Medical Sciences Building, University of Minnesota, irrespective of whether some issues of the Bulletin have reached them.

MORE LACTOSE AVAILABLE TO PENICILLIN PRODUCERS

Because of the threatened shortage of lactose, important for the growing of the mold that yields penicillin, steps have been taken by the War Food Administration in cooperation with the producers to double last year's lactose production in 1944. The output of lactose this year is expected to reach 14 million pounds. The War Production Board estimated that penicillin manufacturers will need 6 to 7 million pounds annually.

WARTIME GRADUATE MEDICAL MEETINGS

The following speakers and subjects have recently been announced for Wartime Graduate Medical Meetings:

At the U. S. Naval Hospital, Santa Margarita Ranch, Oceanside, Calif.: Differential Diagnosis of Functional and Organic Heart Disease (panel discussion), Dr. James F. Churchill and Dr. Wilbur Beckett, July 12.

At the U. S. Naval Hospital and U. S. Naval Academy Dispensary, Annapolis, Md.: Drug Allergies, Dr. Nathan B. Herman, July 21.

PUBLIC HEALTH UNDER HITLER

In addressing chemists of Lower Silesia in Breslau, the reichsapothekerfuehrer stressed that no difficulties with regard to the supply of raw materials need be feared, as all genuine military and civilian requirements of medicine have been guaranteed, according to the *Hamburger Fremdenblatt* of February 12. The shortage which has been noticeable in some places was caused by an occasional morbid craving for medicine shown by many persons. A considerable part of the demand for medicine, which has increased extraordinarily, is the result of a real need, but medicines were often hoarded. While before the war a small packet was bought, purchasers now always buy the largest. In this way persons who really need medicine are made to suffer.

In order to prevent this, measures are to be taken, for instance, on the insulin market, which will guarantee that the requirements of genuine sufferers from diabetes are met. Naturally many prewar medicines are no longer available, but they are dispensable drugs for which there are equivalent substitutes. Raw materials have been secured. Air raids can only temporarily interrupt deliveries and the interruptions can quickly be made up for from substitute stocks throughout Germany. The demand for homeopathic medicines, which varies in different places, can also be taken into consideration. The output of the pharmaceutical industry, which has increased threefold compared with prewar years, naturally goes largely to the armed forces, but these in turn make medicines available to the raided districts and for other special needs. In Germany as a whole 11 million children are collecting medicinal herbs. Their average is estimated at 1 Kg. of dry herbs. A considerable proportion of these goes to the armed forces. The shortage of camomile this year is due to the bad harvest. The name Deutscher Haustee may be used only for teas examined by the reich health office. Most of the young people have been conscripted, and therefore the shop staffs are often too old. In addition, the chemist now often has to do twice as much work. The employment of women has been justified by the results.

Curentul of Jan. 24, 1944 (Rumania) states that speculation in medicines which are in short supply, such as insulin, surpasses all limits. Although these are officially lacking in chemists' and drug stores, offers to obtain them for use as a privilege are made, naturally at high prices. It is thought that the Ministry of Health should investigate the matter.

CINCHONA BARK AND CINCHONA ALKALOIDS

The War Production Board recently amended order M-131, governing the allocation of cinchona bark and cinchona alkaloids, to permit the delivery of quinidine to an ultimate consumer on the receipt of a prescription signed by a person who is licensed to prescribe drugs. Only physicians licensed to practice medicine were permitted to prescribe quinidine prior to this revision. Quinidine may be used only for the treatment of cardiac disorders, the War Production Board said.

COMMUNITIES IN NEED OF PHYSICIANS

The following communities have applied to the U. S. Public Health service for federal assistance in obtaining the services of physicians under the recently enacted law authorizing an appropriation of $200,000 for the relocation of physicians:

Waxhaw (Union County), North Carolina.
Glenrock (Converse County), Wyoming.
Leola (McPherson County), South Dakota.
Faith (Meade County), South Dakota.
Vale (Malheur County), Oregon.
McEwen (Humphreys County), Tennessee.
Tribune (Greeley County), Kansas.
Colome (Tripp County), South Dakota.
Hiawassee (Towns County), Georgia.
Stover (Morgan County), Missouri.

Physicians interested in locating in these communities should communicate with the Surgeon General, United States Public Health Service, Washington (Bethesda Station), D. C.

ORGANIZATION SECTION

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE NINETY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, JUNE 12-16, 1944

HOUSE OF DELEGATES

Second Meeting—Tuesday Morning, June 13

The House of Delegates was called to order at 10 a. m. by the Speaker, Dr. H. H. Shoulders.

Roll Call

On motion of Dr. A. A. Walker, Alabama, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the House dispensed with the roll call.

Presentation of Minutes

Dr. A. A. Walker, Alabama, moved that the House dispense with the reading of the minutes. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

Report of Reference Committee on Credentials

Dr. Deering G. Smith, Chairman, reported that one hundred and sixty-nine members of the House of Delegates had been registered.

Report of Reference Committee on Medical Education

Dr. W. C. Davison, Chairman, presented the following report:

1. Report of Council on Medical Education and Hospitals: Your reference committee approves the report of the Council on Medical Education and Hospitals, section by section and as a whole, as printed in the Handbook.

2. Supplementary Report of the Council on Medical Education and Hospitals: Your reference committee approves the supplementary report of the Council on Medical Education and Hospitals, which includes the "Essentials of an Acceptable School for X-Ray Technicians" and changes in the curriculum section of the "Essentials of an Acceptable Medical School."

3. Resolution Opposing Training of Nonmedical Personnel in Audiometry: Your reference committee approves the Resolution Opposing Training of Nonmedical Personnel in Audiometry, introduced by Dr. G. Henry Mundt, Illinois, amended to read: *"Resolved*, That the American Medical Association is opposed to the training and practice of nonmedical personnel in audiometry, except under the direction and supervision of a qualified physician."

4. Resolution on Shortage of Trained Nurses: Your reference committee approves the Resolution on Shortage of Trained Nurses, introduced by Dr. S. E. Gavin, Wisconsin, amended to read:

WHEREAS, There is a very obvious deficiency in trained personnel for nursing; and

WHEREAS, The demands for adequate nursing are apt to be greater; be it

Resolved, That the Council on Medical Education and Hospitals communicate with the various national organizations concerned with nursing for the purpose of discussing the present nursing situation in order that the proper nursing bodies may consider the matter with a view toward its amelioration.

5. Resolutions on Creation of Board of General Practice: Your reference committee does not approve the Resolutions on creation of a Board of General Practice, introduced by Dr. H. A. Luce, Michigan, because of lack of jurisdiction, but it recommends that this proposal be referred to the Council on Medical Education and Hospitals for transmissal to the Advisory Board for Medical Specialties.

Respectfully submitted,

WILBURT C. DAVISON, Chairman.
THOMAS S. CULLEN.
CHARLES H. PHIFER.
FRANCIS F. BORZELL.

On motion of Dr. Davison, seconded by Dr. Walter E. Vest, West Virginia, and carried, section 1 of the report of the reference committee, approving the report of the Council on Medical Education and Hospitals, was adopted.

It was moved by Dr. Davison, seconded by Dr. William Weston, Section on Pediatrics, and carried, that the House approve the second section of the report of the reference committee, approving the supplementary report of the Council on Medical Education and Hospitals.

Dr. Davison moved that the third section of the report of the reference committee, approving an amended resolution referring to audiometry, be adopted. The motion was seconded by Dr. John Z. Brown, Utah, and carried.

The fourth section of the report of the reference committee, recommending an amended resolution dealing with shortages of trained nurses, was adopted on motion of Dr. Davison, seconded by Dr. James C. Sargent, Wisconsin, and carried.

The fifth section of the report of the reference committee, referring resolutions dealing with the creation of a board of general practice to the Council on Medical Education and Hospitals, was adopted on motion of Dr. Davison, seconded by Dr. John Z. Brown, Utah, and carried.

On motion of Dr. Davison, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the report of the reference committee was adopted as a whole.

Report of Reference Committee on Miscellaneous Topics

Dr. H. A. Luce, Chairman, presented the following report:

To this committee was referred the resolution from Dr. James R. Miller, Connecticut, which is short.

Your committee wishes to quote from "The Appeal in behalf of the Wells National Testimonial Fund," as follows: "The Benefactor of Mankind, by the bestowal upon the world of the greatest physical boon ever yet conferred by man upon his fellows—the soother of the sufferings of the battle field, the hospital and the household—perishing prematurely in the course and as a consequence of his own zealous eagerness to amplify and extend the advantages of his discovery, not only received no recompense for his labors, such as has fallen to the lot of those inventors with whom he should at least take equal rank, but left unprovided with even moderate means of support the loved ones of his own fireside."

Your reference committee wishes to add to the resolution a further recommendation that this endorsement and commendation be officially transmitted to the Wells National Testimonial Fund Committee, by the Secretary of the American Medical Association.

Respectfully submitted,

HENRY A. LUCE, Chairman.
CHARLES G. STRICKLAND.
LUCIUS F. DONOHOE.
ROBERT A. PEERS.
ROBERT H. HAYES.

Dr. Luce moved that the report of the reference committee be adopted. The motion was seconded by Dr. Henry S. Ruth, Section on Anesthesiology. After discussion by Drs. Allen H. Bunce, Georgia, Henry S. Ruth, Section on Anesthesiology, Holman Taylor, Texas, and Dr. Luce, the report was referred back to the reference committee, on motion of Dr. James R. Miller, Connecticut, seconded by Dr. Lloyd Noland, Alabama, and carried.

Report of Reference Committee on War Participation

Dr. James R. McVay, Chairman, presented the following report, which on motions of Dr. McVay, duly seconded and carried, was adopted section by section and as a whole after discussion by Dr. Francis F. Borzell, Pennsylvania, and Dr. McVay:

1. Your Reference Committee on War Participation met and considered the printed report of the War Participation Committee in the Handbook and the remarks of Dr. Walter Donaldson, chairman of the committee, before the House of Delegates. It desires to commend the work of this committee.

The fact that but twenty states have responded to the request for the creation of special committees of War Participation leads us to reemphasize that portion of the report in order that the delegates from states not having such a committee may urge their respective state societies to create such a special committee. It seems to us that these committees may be of great help in cementing the home ties and continued morale of those in the service and those who remain at home.

Service bulletins and mimeographed letters such as those of Oregon, Ohio, Pennsylvania and numerous other state and county societies serve to keep the men in the service in active contact with their home community activities and are a most useful activity of War Participation committees.

2. War Participation committees that have secured the publication of the names of service members in local newspapers, county medical society bulletins and other such means help to acknowledge the patriotism of those of us who are in their country's service. Public exercises of service flag unveilings and of memorial plaques with addresses by local and state administrative officials help to create statewide recognition of the unselfish devotion of the medical profession toward the successful prosecution of the war effort. The voluntary enlistment of nearly 50,000 American physicians in the service of their country is a fitting challenge to those who would charge the profession with selfishness. The continued emphasis and publicity of this endeavor of patriotism now and after the war is won is a worth while activity of War Participation committees.

The protection and securing of economic and professional rehabilitation of members of the profession returning from service is a lofty ideal but can help those men only when it is translated into action. The establishment of loan funds by county societies, through the efforts of War Participation committees, can be of material assistance to returning medical veterans in reestablishing themselves in their practice and is a commendable and worthy effort.

Respectfully submitted,

James R. McVay, Chairman.
Edward Jelks.
James P. Wall.
Andrew F. McBride.
William D. Johnson.

Report of Reference Committee on Postwar Planning

Dr. Walter F. Donaldson, Chairman, presented the following report, which was adopted as a whole, on motion of Dr. Donaldson, seconded by Dr. John Z. Brown, Utah, and carried:

Your reference committee is fully appreciative of the foresight which led early in 1943 to the American Medical Association assuming the leadership in planning for postwar medical service. It recognizes the wisdom which resulted in close cooperation with the American College of Physicians and the American College of Surgeons and later with the invaluable relationships established with hospital associations, with American medical colleges, with state licensing boards and with others.

The complexity of the problem involved is illustrated by variation in the age and in the extent of previous medical training and experience of the approximately 50,000 physicians in military service. To meet adequately the needs and the desires of these thousands on their release from duty with the Army, Navy, Public Health Service and other war related services will undoubtedly at times try the skill of the planners and the patience of the doctors anxious to return to their prewar practice or to graduate training preliminary to entry into their chosen fields.

The good work of the Committee on Postwar Medical Service has undoubtedly been climaxed in the pilot postwar planning questionnaire mailed in February and March to 3,000 medical officers on duty with the armed forces as they were selected, 1 in every 15 names from an alphabetical machine record list of all medical officers on duty on the first of last October.

Your reference committee is informed that the first report on the findings of this generous sample group of completed questionnaires returned as they have been prepared by Lieut. Col. H. C. Lueth, Liaison Officer with the American Medical Association, is to be published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of June 24. This initial analysis will doubtless be followed by others appearing in THE JOURNAL, and the anticipated needs of the returning doctors may thus be clarified state by state to a degree limited only by the enthusiasm and energy with which state medical associations may see fit to collaborate with the postwar planning committee of the American Medical Association in this most important service to the public and our thousands of returning fellow physicians.

The Committee on Postwar Medical Service is deemed equally worthy of the full support of this House of Delegates in its recommendations for the development at headquarters of the American Medical Association of a trustworthy source of information available to all returning medical officers. These forms of advance preparation plus experience, which the Council on Medical Education and Hospitals is anxious to develop in behalf of and through the expressed needs of returned medical officers for whom the war is already over should promptly and effectively aid in delineating the extent and type of graduate instruction now desired by those who entered medical service for the armed forces at experience levels ranging from incompleted internships to the last word in specialists' training. These our colleagues are not to be forgotten, and the individual members of the 1944 House of Delegates may best implement the plan of the Committee on Postwar Medical Service by studiously reviewing each published interpretation of postwar desires as revealed by the returned questionnaires and by then stimulating postwar service committee action at state and county levels.

Your reference committee closes its report by transmitting to this House of Delegates and the great membership thus represented the cordial invitation of the Committee on Postwar Medical Service to all constantly to make use of the planning committee's facilities at headquarters of the American Medical Association in the coordination of constituent and component society endeavors to accomplish that which should be our common purpose now as always, to "promote the science and art of medicine and the betterment of public health."

Respectfully submitted,

Walter F. Donaldson, Chairman.
George F. Lull.
Harold W. Smith.
William A. Coventry.
Henry R. Viets.

Reference Committee on Sections and Section Work

Dr. L. W. Larson, Chairman, presented the following report, which on motion of Dr. Larson, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, was adopted:

The prominence which the annual session of the American Medical Association has maintained for many years is due primarily to the excellent scientific programs which have been presented. The Council on Scientific Assembly, with the assistance of the section secretaries, is responsible for this record of achievement and should be highly commended for its work. It is to be especially commended for the excellent program arranged for this year, in spite of many difficulties incident to the war emergency.

Your reference committee wishes to reemphasize the desirability of providing scientific papers of interest to the general practitioner in both the Section on Miscellaneous Topics and the General Scientific Meetings.

Respectfully submitted,

L. W. LARSON, Chairman.
WILLIAM WESTON.
JEAN P. PRATT.
J. ARCHER O'REILLY.
R. D. BERNARD.

Report of Reference Committee on Hygiene and Public Health

Dr. Don F. Cameron, Chairman, presented the following report:

1. Supplementary Report of Council on Industrial Health: The Supplementary Report of the Council on Industrial Health was approved by the Board of Trustees and was referred to this reference committee for further study and recommendation. A copy of this report was given to each member of the House at the Monday session. This report was approved by the Council on Industrial Health after consultation with representatives from the American Federation of Labor, the Congress of Industrial Organizations, the National Association of Manufacturers, the United States Chamber of Commerce and the Joint Claims Committee of the Stock and Mutual Casualty Insurance Companies. Because of the current importance of placing the disabled in suitable employment, each of the listed conferees is asking for ratification of this report by the respective parent organization.

This report appeared to your reference committee to have been very well prepared. It deals concisely with the purpose, scope, general procedures, equipment and records advised in this work, together with recommendations as to the type of examinations involved and gives suggestions as to the personnel and costs and outlines a suitable procedure for review of, and appeal from, examinations and decisions.

Your reference committee recommends that the House of Delegates approve this Supplementary Report of the Council on Industrial Health.

2. Resolutions on Giving Intelligent Instruction in Science and Biology to the Youth of America and Proposed Resolutions Regarding Health Education in Secondary Schools: The Board of Trustees approved and sent on for presentation to the House of Delegates the resolutions adopted by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. These resolutions have to do with the teaching of health education and biology in secondary schools.

In pursuance of the action of this House of Delegates a year ago, the Bureau of Health Education submitted the resolutions to the Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association. The joint committee thoroughly approved the basic idea that sound teaching in hygiene is dependent on a real understanding of the fundamentals of biology involved. It emphasized its reluctance to urge this biologic instruction on the schools until there was available a teaching personnel capable of handling the subject in a really constructive way, avoiding nonessential controversial features. It outlined in some detail some subjects recommended for emphasis, such as the role of bacteria and parasites in disease, cell growth in relation to heredity and malignant disease, an accurate vocabulary in matters pertaining to sex and reproduction, and an intelligent understanding of the theories and basic facts of biologic genesis and evolution.

Your reference committee approved in general the report and recommendations of this joint committee. It thought advisable to recommend modification of one of the basic resolutions of the joint committee by inserting the phrase "with collaboration of suitable medical authorities," so that this portion of the resolution will read "The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association endorses the recommendation of the Office of Education that schools throughout the country provide, with the collaboration of suitable medical authorities, programs of health education for all secondary school students. . . ."

With this modification, your reference committee commends and endorses the outline and recommendations for the teaching of biologic science and physical fitness suggested by the joint committee.

3. Resolution on Report of Council on Medical Service and Public Relations Dealing with Tuberculosis: To this committee was also referred that portion of the report of the Council on Medical Service and Public Relations which has to do with a communication received by it from the National Tuberculosis Association requesting the Council's approval of a resolution on the control of tuberculosis. The Council approved a revised resolution as printed in the Supplementary Report emphasizing in particular "that it is necessary to extend procedures for careful, continuous supervision of the tuberculous by practicing physicians, who, in cooperation with duly constituted health authorities, federal, state and local, are in a position to deal with these problems by modern methods to prevent the spread of this communicable disease."

Your committee recommends the approval of the resolution as printed in the Council's report.

4. Survey of Centers for Diagnostic Aid to Physicians: The question of centers for diagnostic aid to physicians was considered by the Council on Medical Service and Public Relations. It recommended that surveys as to the need of such centers be made preferably by the "local communities concerned." The Council recommended that the American Medical Association should "stand ready to assist local communities" in developing these centers where need for them was established.

Your committee believes that the Council intended to state but perhaps neglected to make it clear that such surveys should be made by or in consultation with the physicians of the communities concerned and that the most valuable aid which the American Medical Association could render in the majority of instances would be to make available to qualified physicians information as to what communities these surveys showed to be in need of competent diagnostic facilities.

Respectfully submitted,

DON F. CAMERON, Chairman.
WALTER W. KING.
STEPHEN E. GAVIN.
R. C. WILLIAMS.
STANLEY H. OSBORN.

Each section of the report of the reference committee was adopted on motions of Dr. Cameron, duly seconded and carried.

Dr. Cameron moved that the report of the reference committee be adopted as a whole. After discussion by Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, Dr. Holman Taylor, Texas, Dr. Cameron and the Speaker, it was moved by Dr. G. Henry Mundt, Illinois, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried, that the portion of the report referring to modification of the recommendation of the Joint Committee by inserting the phrase "with collaboration of suitable medical authorities" in one of the basic resolutions of the Joint Committee on Health Problems in Education be reconsidered.

On motion of Dr. G. Henry Mundt, Illinois, seconded by Dr. A. A. Walker, Alabama, and carried, that portion of the report of the reference committee was rereferred to the reference committee.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Raymond L. Zech, Chairman, presented the following report, which on motions of Dr. Zech, duly seconded and carried, was adopted section by section and as a whole:

1. Proposed Amendment to Constitution Affecting Physicians in Veterans Facilities: Your reference committee feels kindly toward recommended changes affecting the Veterans Facilities and approves in principle the suggested changes. It met in conference with representatives of the Judicial Council. The problems presented were too numerous for the committee to recommend any specific changes at this time. It recommends, however, that the matter be taken up by the Board of Trustees and that the Board report on this matter at the next annual session.

2. Proposed Amendments to By-Laws, Chapter XII, Sections 2 and 3: Your reference committee approves in principle the proposed amendments to sections 2 and 3 of chapter XII of the By-Laws of the American Medical Association submitted by the delegate from the District of Columbia. It requests that the Board of Trustees study these proposed amendments and bring in a practical solution at the next annual session.

3. Supplementary Report of Council on Medical Service and Public Relations: In reviewing the supplementary report of the Council on Medical Service and Public Relations, your reference committee approves of the portion of that report dealing with the Bureau of Medical Economics and its duties but approves only in principle that portion of the report relating to the Veterans Administration.

The report of the Council on Medical Service and Public Relations that relates to students was reviewed. Your committee approves of the proposed change and suggests that the student members consist of those medical students who are in their clinical years of study.

Your reference committee recommends the adoption of this report.

4. Proposed Amendments to the Constitution and By-Laws Dealing with Apportionment of Delegates: Two amendments were introduced which would affect the apportionment of delegates, and one of these would change the entire idea of the apportionment of delegates, suggesting that apportionment be made on the basis of population. Population is hard to estimate today because of the war, there having been a great migration of people. Relocation must be anticipated following the war, and therefore it appears that apportionment on the basis of general population is not feasible at this time.

Your reference committee disapproves of any change from the present method of apportionment.

5. Proposed Amendment to Constitution, Article 6, Section 3, Introduced at the 1943 Session and Contained in the Report of the Secretary: Since the Board of Trustees of the Association represents the medical profession as a whole rather than geographic areas, your reference committee feels that the appointment of Trustees on a geographic basis is unwise and unpractical. It therefore recommends that this amendment be not adopted.

6. Report of Judicial Council: In reviewing the report of the Judicial Council, your reference committee is in complete accord with the Council's clarification of the purposes outlined in the Principles of Medical Ethics and therefore recommends the adoption of the report.

At this time your committee wishes to take cognizance of the conscientious and persevering efforts of the Judicial Council under the brilliant leadership of the Chairman, Dr. George Edward Follansbee, who has devoted many years in establishing a Council which has faithfully and patiently helped solve many important problems. Dr. Follansbee's clear thinking and judicial attitude enhanced by his unquestionable loyalty to his organization sets an example for all of us. Your reference committee therefore takes this opportunity to express its deep appreciation of his untiring efforts. Furthermore, it is its sincere wish that we may continue to have the privilege from his wealth of experience and wise counsel.

Respectfully submitted,

Raymond L. Zech, Chairman.
L. G. Christian.
Harry V. Paryzek.
Walter E. Vest.
Charles E. Mongan.

Report of Reference Committee on Reports of Officers

Dr. George W. Kosmak, Chairman, presented the following report, which on motions of Dr. Kosmak, duly seconded and carried, was adopted section by section and as a whole:

1. Address of the Speaker, Dr. H. H. Shoulders

It is a pleasure to commend the faithful service of your Speaker, who has concluded six years of service in this important position. His address speaks for the devotion which he has given to the onerous duties imposed on him and constitutes an evidence of the efforts which he has expended on behalf of the Association's interests. Your reference committee is in accord with the ideas expressed in the address and commends in particular his refutation of the arguments advanced in The Journal article to which reference is made, written by a prominent advocate of socialized medicine who himself is not a physician. Your reference committee believes that this refutation deserves careful attention by the medical profession.

Your reference committee desires again to express to the House of Delegates its appreciation of the excellent service rendered by this faithful officer in presiding so efficiently over the deliberations of this body.

2. Address of the President, Dr. James E. Paullin

It is a privilege to have listened to the extremely able address of our President, and your reference committee desires to make the following comments on its principal features:

(*a*) Wartime Graduate Medical Meetings: It is a great satisfaction to note the extended attention which has been given to this important activity by the American Medical Association and the personal interest of the President in it. The lecturers who have given their time and effort as a contribution to the war effort are to be highly commended, and approval should be given to the decision that the Association has contributed the necessary funds for this activity in cooperation with the American College of Surgeons and the American College of Physicians. Your reference committee regards this as money well spent and agrees that this type of instruction should be carried to the smaller hospitals and other medical communities distantly removed from the larger medical centers. This activity points the way for the development of more effective postgraduate instruction in the future, and the process of decentralization involved in this type of teaching is to be commended.

(*b*) Postwar Planning: Your President calls attention to the necessity for developing the proper type of instruction for medical men discharged from the armed services. Your reference committee commends his suggestion for the establishment of a bureau of information in the central office in Chicago and likewise the effort to stimulate the state and county societies to establish local offices which are to cooperate with that bureau in bringing the necessary information to those who desire it. This central bureau might also serve the purpose of affording to practitioners of medicine the opportunity for location in new communities, and this matter should be given adequate publicity. It would appear desirable if this particular activity could be developed into a permanent establishment under the immediate control of the Board of Trustees. Your reference committee suggests that steps be taken to carry out the recommendation.

(*c*) The Supply of Medical Students: This matter is dealt with under separate resolutions which have already been given consideration. Nevertheless, your reference committee desires to stress the importance of the movement for a continuing supply of students adequate for all anticipated medical needs.

(*d*) Rehabilitation of the Disabled: Your reference committee desires to commend the unification and expansion of efforts in this direction and suggests that the American Medical Association should be prepared to offer its services to implement this program whenever requested.

(*e*) Provision of Medical Care: Your reference committee desires to call the attention of the House of Delegates to remarks of the President with reference to the necessity for formulating policies for the guidance of the various officers of the Association and the House of Delegates in dealing with all questions concerning medical care. Such a statement should note the extent to which the federal government and other agencies interested in medical service have entered various

fields and enlist the cooperation of the profession in a combined program, the fact being borne in mind, however, that the control of funds and other details should be left to the state and local agencies.

(f) Unity Within the Organization: This seems to your reference committee to constitute a very important item in the President's address and calls for a unanimity in whatever official action may be taken by the Association through the medium of the House of Delegates and the constituent bodies of the Association. Your committee feels that it is desirable to iron out differences of opinion as to policies and other matters on the floor of the House rather than independently, so that the spirit of unity may be observed in those great questions which involve the entire profession.

In conclusion, your reference committee desires to compliment again the present incumbent of this high office for the faithful attention he has given to his important duties and for the carefully thought out recommendations contained in his report. It bespeaks for them the well deserved attention which they merit.

3. Address of the President-Elect, Dr. Herman L. Kretschmer

Your reference committee desires to commend the outspoken address of the President-Elect and to submit the following comments:

Regarding his suggestion that the education of the public particularly in social medical questions be more freely participated in by the general practitioner and family physician, it would be well if every member of the profession would make a personal effort to explain to patients, whenever the opportunity offers or can be made, the problems with which medicine is faced, and particularly the results of governmental dictation and supervision of medical practice.

The President-Elect calls attention to the prevalence of neuropsychiatric problems in the life of the nation. This situation seems to be of great proportion, and your reference committee commends his suggestion for the comprehensive study of the mental health of our people by all branches of our profession.

Your reference committee also desires to endorse his suggestion that the Council on Medical Education and Hospitals give further consideration to improvements in the teaching of pharmacology in medical schools, particularly as this applies to prescription writing and drug therapy.

Your reference committee commends the suggestion that, in addition to the preliminary program devoted to the interests of the general practitioner, consideration be given to the recommendation that each of the special sections devote one of its sessions to the presentation and discussion of papers devoted to matters of interest to the general practitioner. The American Medical Association, among its other responsibilities, should retain as one of its signal aims the conception that it constitutes an important educational institution both for the medical profession and for the public at large.

Respectfully submitted,

George W. Kosmak, Chairman.
Carl R. Steinke.
Arthur S. Risser.
Thomas A. Pitts.
Walter G. Phippen.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. E. S. Hamilton, Chairman, presented the following report, which, on motions of Dr. Hamilton, duly seconded and carried after discussion, was adopted section by section:

Report of Secretary

Your reference committee has reviewed the complete report of the Secretary and commends it for its information, completeness and brevity. It recommends the acceptance of the report as presented in the Handbook.

Report of Board of Trustees

The report of the Board of Trustees is so lengthy and exhaustive that it is possible to review only the high spots in it and to comment on and make recommendations in those controversial questions in which the House of Delegates has not previously taken definite action or where new conditions have arisen necessitating clarification of their previous position.

1. Income and Expense: On first reading, the net income of the Association for the current year seems very high; but when the depreciation in equipment of the physical plant, the curtailment in the salary and expense of personnel as well as the volume of proposed new expenditures is understood, it seems advisable that a surplus should be accumulated for the lean years which may come after the cessation of the hostilities. The responsibility of the American Medical Association to returning medical officers is great and the potential expense can be large in the immediate postwar years. Accordingly, after due consideration, it is the opinion of your reference committee that the Board of Trustees should be commended for its careful financial management. Your reference committee commends the Board of Trustees for instituting group life insurance and retirement annuity plans for their employees, and your reference committee recommends the approval of this part of the report of the Board.

2. The Journal and Other Publications of the American Medical Association: The Journal continues to be well managed and edited. Careful reading thereof will keep the subscriber abreast of scientific, economic and special wartime activities of the various governmental agencies. It is particularly encouraging to notice a gain of 4,760 in subscriptions to The Journal. The report on special journals, lending library, Quarterly Cumulative Index Medicus, Hygeia and the American Medical Directory show the extensive activities in the publishing field. Your reference committee commends the Board of Trustees and the editors for their fine work and recommends the approval of this section of the report of the Board.

3. Cooperative Medical Advertising Bureau: This bureau continues to render excellent cooperation to the state journals associated with it. Your reference committee recommends the approval of this section of the report of the Board.

4. The Council on Pharmacy and Chemistry: This council continues to work cooperatively with federal agencies, the American Pharmaceutical Association, the Council on Industrial Health and many other organizations. It has continued its regular publications and encouraged research by grants. It investigates new drugs, reporting its findings through ethical channels to the medical profession.

The resignation of Dr. W. C. Rose, a member of the Council for seven years, is noted with regret. Your reference committee recommends approval of this section of the report of the Board.

5. Chemical Laboratory: The Chemical Laboratory continues to work cooperatively with the Council on Pharmacy and Chemistry as well as with the Bureau of Investigation, governmental agencies, professional groups and manufacturers. Your reference committee recommends approval of this section of the report of the Board.

6. Council on Physical Therapy: Publications include the Manual of Physical Therapy and that of Occupational Therapy. The Manual of Physical Therapy is being revised. This council has given attention to artificial respiration, the education of technicians, audiometers and hearing aids, ophthalmic charts and ultraviolet radiation for disinfection purposes. Your reference committee recommends approval of this section of the report of the Board.

7. Council on Foods and Nutrition: This council has been active in the matter of nutritional education, working with groups of the food industry and the government. It has been concerned with nutritional research and education. Many articles have been published, and the Handbook of Nutrition has been brought up to date. Your reference committee recommends commendation of this section of the report of the Board.

8. Council on Industrial Health: This council shows a continuous growth in its contacts with the medical profession, government, labor, insurance companies, the National Association of Manufacturers and the United States Chamber of Commerce. Medical schools have become interested in undergraduate instruction. Attendance at the annual congresses on

Industrial Health has increased. It contemplates a certifying board in the field of industrial health. Its field of activity touches workmen's compensation, rehabilitation, nutrition in industry, industrial medical service plans and research on silicosis and burns. It has prepared a very comprehensive outline for physical outline of prospective employees, rating them under three classifications: (*a*) fit for all work; (*b*) fit for work under periodic medical review (1) with limited physical exertion, (2) in nonhazardous work, (3) with orthopedic defects, (4) with defective vision, (5) with defective hearing and (6) with neuromental handicaps; (*c*) unfit for work at time of examination.

The physical examination blank is very complete, but your reference committee doubts if most corporations would insist on a blood smear, examination of the eye background, sedimentation rate, chest x-ray examination and Wassermann test except for food handlers.

The outline for physical examination is excellent and complete but possibly too exhaustive to be practical.

Your reference committee recommends approval of this section of the report of the Board.

9. Report of the Bureau of Legal Medicine and Legislation: Postwar medical licensure of recent graduates who have been prevented from licensure by entry into government service should be studied and given assistance. Isonipecaine, Demerol or any morphine substitutes should be brought under federal control because of their habit forming tendencies. Lectures on medical jurisprudence should be encouraged. The enacted federal legislation to commission female physicians in the medical corps of the Army and Navy to have the same pay and allowances and to be entitled to the same rights as members of the Officers Reserve Corps of the Army and Naval Reserve with the same grade and length of service meets with approval.

Twenty-four million two thousand dollars allotted to states for obstetric and pediatric care for wives and infants of service men is not entirely satisfactory and will be reported on by another reference committee, but the sum of $200,000 for the relocation of physicians in critical areas is apparently inadequate.

The proposals for a vastly expanded program for the construction of additional hospital facilities for veterans of World War II are proper and timely, even though more than 80 per cent of all admissions have been for disabilities not connected with service.

The laws enacted for providing for the vocational rehabilitation of veterans under the direction of the Veterans Administration and of disabled civilians under the direction of the Office of Vocational Rehabilitation in the Federal Security Agency and a bill appropriating $26,100,000 for the medical care of recruited and migrant farm workers have progressed beyond influence but meet with approval of your committee.

Other pending legislation contemplating a codification of federal laws relating to the United States Public Health Service, a study of human nutrition and nutritional value of food, the treatment of Selective Service registrants infected with venereal disease, the employment of alien physicians by the Bureau of Indian Affairs, a permanent medical corps in the Veterans Administration and the creation of a Bureau of Vital Records in the Public Health Service seemingly require further study and investigation.

The enacted legislation to provide a nurse training program administered by the Public Health Service, for which $52,500,000 has been appropriated to date, has already progressed beyond the point where we might be of influence or service.

The special committee created to investigate the education and physical fitness of the civilian population as related to national defense is probably already at work, and it might as well be authorized to investigate the aid available to the physically handicapped.

The proposed legislation to commission optometrists and morticians as officers of the Army and Navy Medical Corps cannot be supported by the Association for obvious reasons.

The other bills providing for medical care to the recipients of public assistance, that insecticides containing arsenic or fluorine be distinctly colored, a broadening of the Social Security Act to include employees of religious, charitable, scientific and certain other organizations and to provide postwar educational opportunities for service personnel contain nothing evidently objectionable.

The granting of military rank to members of the Navy and Army Nurse Corps and to authorized service in the medical reserve corps to be counted for pay purposes can be supported.

A publicly supported adult education program for which federal legislation is pending seems to be of doubtful value, as this is already made accessible by local educational institutions and universities.

Compulsory health insurance has been properly opposed heretofore, and the pay as you go income tax has been adequately explained in THE JOURNAL.

A pending bill conferring jurisdiction over industrial hygiene on labor departments requires additional study.

10. Report of Bureau of Public Relations: The report of the Bureau of Public Relations is purely informative and is satisfactory.

11. Bureau of Investigation: The duties of this bureau are to collect and dispense information concerning "patent medicine," quacks, frauds, and the like, to physicians, laymen, government authorities and other organizations, and it has continued to do efficient work in regard to the subjects which came within its province. Approval of this part of the report of the Board is recommended.

12. The Committee on Wartime Graduate Medical Meetings: This committee, having organized the teaching personnel and facilities of American medicine, has mobilized for the purpose of offering advanced instruction to medical officers of the armed forces and to civilian doctors. The program is arranged so as to cover the entire nation. The plan has proved to be a success, and the splendid work of the organization demonstrates the wisdom of the American Medical Association in having initiated the idea. Commendation of this section of the report of the Board is recommended.

13. Bureau of Health Education: Notwithstanding handicaps occasioned by the war, causing lessening of the work of the bureau in 1943, still the year was a busy one demonstrating continued usefulness. The work of this bureau is most important and arduous, preparing articles for THE JOURNAL and for HYGEIA, the arrangement of broadcasting radio programs and presenting public addresses and distributing pamphlets on important medical topics for the benefit of the profession and the public. By cooperation with various organizations such as the National Education Association, Parent-Teacher Associations and other groups of similar character, the bureau has carried its important message throughout the nation. Your reference committee commends the bureau for its splendid work.

14. The Committee to Study the Problems of Motor Vehicle Accidents: This committee has shown the careful investigation of this important subject. It calls attention to the various causes that contribute to accidents, both avoidable and unavoidable. It fears an enormous increase in accidents following the war on account of deteriorated cars, the need of construction and reconstruction of highways, increase in the speed limit and the unstable nervous system of drivers who return from the war. The committee suggests that, after all, the greatest problem is neither the road nor the car but the human element. It emphasizes the hazard of drivers under the influence of alcohol and gives statistics to show that 11 per cent of drivers involved in fatal accidents were drinking. They suggest that the doctor could be of great assistance in lessening these accidents by having applicants for drivers' licenses examined by medical men to determine such physical defects as the impaired limb, poor vision and deafness, and other disqualifying conditions. It offers the suggestion that the doctor may render good service to his patient when he discovers a condition of the patient that makes it unsafe for him to drive and so advises. Your reference committee commends the work of the committee on this most important subject.

15. Communication from Members of Committee on Conservation of Vision: A communication was received from members of the Committee on Conservation of Vision. Your reference committee finds that the Committee on Conservation of Vision is confronted with so many obstacles that it cannot function until these obstacles are removed. It is therefore

recommended that the communication from members of the committee be deleted from the report of the Board of Trustees and the committee be discontinued.

16. Office of Liaison Officer: The report of the Board of Trustees on the work of the Office of Liaison Officer is approved and the services of the Liaison Officer to the American Medical Association are commended.

17. Proposed Plan of American Medical Association for Postwar Education: The proposed plan of the American Medical Association for postwar education and cooperation with returning medical officers was reviewed by your committee. A joint committee consisting of members of the Board of Trustees of the American Medical Association and members of the American College of Physicians and the American College of Surgeons as well as other agencies has had several meetings and has worked out a rather definite plan for reeducation of returning veterans, assistance in location, cooperation with medical schools for postgraduate work and a study of economic conditions throughout the United States. While the committee is not ready at this time to make a definite report, it is safe to report that the matter apparently is well in hand, that questionnaires are ready for transmission to all members of the armed forces as to what their needs are in regard to postwar assistance. Already considerable money has been spent in this work, and more has been earmarked for this service. The committee is reporting this at this time so that the House of Delegates may know that this work is under way, that the returning medical officers are being consulted as to their needs and that the Trustees of the American Medical Association are alert to the responsibilities of organized medicine to its members in the armed forces. Your reference committee recommends approval of this section of the report of the Board.

18. Bureau of Exhibits: The report of the Bureau of Exhibits is of especial interest, as it shows the scope of its activities both at the time of the annual session and throughout the current year. Its value as an educational feature is probably little understood by the profession at large, but the work of the bureau is highly commended by your reference committee.

19. Resolution Requesting Board of Trustees to Prepare a Concise Statement of Achievements of the Medical Profession for Submission to Boards of Education: The Board of Trustees feels that the intent of the resolution has been accomplished through publication of material on the achievements of medicine in practically every issue of HYGEIA and also through several histories of medicine which have been published recently. After careful consideration of this report it was the opinion of your reference committee that this report should be referred to either the Reference Committee on Medical Service and Public Relations or to the Reference Committee on Medical Education.

20. Report of Conference of Committee Consisting of Three Representatives Each of the American Medical Association and the American Hospital Association: Your reference committee had a rather prolonged hearing with the pathologists representing the American Society of Clinical Pathologists and members of the Board of Trustees. It recalls to your attention the agreement of 1939 between the Board of Trustees of the American Medical Association and the special committee of the American Society of Clinical Pathologists as well as representatives of the American Hospital Association and the American College of Surgeons. After careful consideration it recommends the reaffirming of the agreement of 1939, since no evidence has been offered which could serve as the basis of any alteration at this time.

Respectfully submitted,

E. S. HAMILTON, Chairman.
OLIN H. WEAVER.
J. B. LUKINS.
ROBERT E. SCHLUETER.
FRANCIS J. SAVAGE.

Section 19 in the report of the reference committee, dealing with the report of the Board of Trustees which refers to the Resolution Requesting Board of Trustees to Prepare a Concise Statement of Achievements of the Medical Profession for Submission to Boards of Education, was referred to the Reference Committee on Medical Education, on motion of Dr. Hamilton, duly seconded and carried.

The reference committee was requested to bring in a report on the Communication from the American Optometric Association and on the Legislative Recognition of Cultists, both contained in the report of the Board of Trustees as printed in the Handbook.

On motion of Dr. Lee O. Frech, Illinois, seconded by Dr. Robert H. Hayes, Illinois, and carried, the report of the Reference Committee on Reports of Board of Trustees and Secretary was adopted as a whole.

Report of Reference Committee on Hygiene and Public Health

Dr. Don F. Cameron, Chairman, presented the following report referring to modification of the recommendation by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association:

Your reference committee recommends that the modification of the recommendation by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association be amended to read "with collaboration of suitable medical and health authorities" instead of "with collaboration of suitable medical authorities" as presented in its report previously submitted, so that the sentence containing this phrase in the report of your reference committee as presented earlier this morning should now read "The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association endorses the recommendation of the Office of Education that schools throughout the country provide, with the collaboration of suitable medical and health authorities, programs of health education for all secondary school students. . . ."

Dr. Cameron moved the adoption of the report as amended, and the motion was seconded by Dr. John Z. Brown, Utah, and carried.

On motion of Dr. Cameron, seconded by Dr. G. Henry Mundt, Illinois, and carried, the report of the Reference Committee on Hygiene and Public Health previously presented and as now amended in this report was adopted as a whole.

NEW BUSINESS

Resolution on Simplification and Standardization of Insurance Forms

Dr. Harry V. Paryzek, Ohio, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, There is a need for the simplification and standardization of forms used by private insurance companies in obtaining information and written opinions from physicians regarding policyholders; and

WHEREAS, The adoption by insurance companies of a simplified uniform method of obtaining medical reports would produce more statistical data of greater value to insurance companies, to the medical profession and to the public health agencies; and

WHEREAS, Use of a simplified uniform method of obtaining medical reports would materially assist in alleviating some of the burdensome paper work which physicians are required to do for insurance companies and policyholders; be it

Resolved, That the Board of Trustees of the American Medical Association shall be instructed to arrange for a series of conferences between representatives of the American Medical Association and representatives of private insurance carriers with a view toward working out a mutually satisfactory plan to bring about simplification and standardization of forms needed to obtain data and opinions from physicians in the adjudication of claims.

Resolution on Consolidation of Federal Health Activities in a Single Federal Department

Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, the House of Delegates has repeatedly advocated the consolidation of federal health activities in a single federal department; and

WHEREAS, In 1936 the House of Delegates specifically recommended that any active efforts by governmental agencies to study and to take measures tending to eliminate occupational diseases should be carried out under the supervision of federal, state and local departments of health; and

WHEREAS, There is pending in Congress a bill, H. R. 4371, which provides five million dollars for use by the federal Department of Labor

for allocating to state departments of labor to initiate industrial health and hygiene programs, thus duplicating activities now engaged in by the U. S. Public Health Service and by the state departments of health; therefore be it

Resolved, That the American Medical Association hereby declares its opposition to the enactment of H. R. 4371 and reaffirms its belief that any extension of governmental activities in the field of industrial health and hygiene should be developed under the supervision and guidance of the U. S. Public Health Service and state departments of health.

Resolution on Lifting of Sex Discrimination from Young Women Desiring to Study Medicine

Dr. Emily D. Barringer, New York, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, It has been laid before this Association that a very serious crisis has arisen in the medical educational program of the United States, owing to the fact that the Army program has withdrawn its allotment to 28 per cent of the student body, leaving the larger percentage of students in the class of the physically disqualified men, group 4 F and to women. This state of affairs has been confirmed by the chairman of the Procurement and Assignment Service, who sees in the near future a possible alarming shortage of physicians; and

WHEREAS, The Congress of the United States on April 16, 1943 enacted Public Law 38, permitting women physicians to secure commissions in the Medical Corps of the Army and Navy; and

WHEREAS, There has been considerable criticism that the number of women obtaining commissions has been disappointingly small; and

WHEREAS, There are many reasons for this small number, which are revealed by a careful study of the problem, as Procurement and Assignment rulings, curtailment of privileges, insurance benefits and others; and

WHEREAS, The woman student has been ignored in the accelerated educational program of the Army and Navy, being classified with the physically disqualified men and in no way receiving monetary or other help from the government; and

WHEREAS, There are many young women who would make excellent physicians if they had not been discouraged because of the sex limitation that has been placed on them; therefore be it

Resolved, That the American Medical Association go on record as lifting sex discrimination from young women desiring to study medicine and that the American Medical Association request the government to give aid to these young women in their medical education commensurate with that granted to the young men.

Resolutions on American Medical Association Legislative and Public Relations Activities

Dr. George R. Dillinger, Indiana, introduced by title Resolutions on American Medical Association Legislative and Public Relations Activities, which were referred to the Reference Committee on Legislation and Public Relations.

Resolutions on Speakers' Bureau

Dr. George R. Dillinger, Indiana, presented the following resolutions, which were referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, The demand on the medical profession for speakers to lay and professional groups on subjects both economic and social that affect the public and medical profession is exceedingly great; and

WHEREAS, It is exceedingly desirable that the headquarters of the American Medical Association maintain more definite and frequent contact with the individual state societies; therefore be it

Resolved, That the House of Delegates of the American Medical Association request the Board of Trustees, when personnel becomes available, to secure men capable of serving as a speakers' bureau on a state's basis; and further be it

Resolved, That personnel be secured also to work with the Secretary of the Association in maintaining contacts with the constituent state societies.

Presentation and Address of Vice Admiral Ross T. McIntire

Dr. James E. Paullin, President, introduced Vice Admiral Ross T. McIntire, Surgeon General of the United States Navy, who addressed the House as follows:

Mr. Chairman, Dr. Paullin, Members of the House: It is always a privilege to come back here, especially when we have such a representative group from American medicine as we have in Chicago today. I think it has been too bad that we haven't been able to do this more in these past two years, but in spite of the transportation difficulties I think what we shall gain from the meeting this year will be of such tremendous value for the services that we won't mind congesting the trains and taking up a few of the spaces of some of the people who may think that they should have them.

I am very glad to have an opportunity to come before the House of Delegates and to say just one word of appreciation for the way that you people have been carrying on the work in civil medicine. It is high time that we in the governmental services were giving much more serious thought to your problems, and that is one thing that I hope will also come from this meeting here in Chicago: what we can do to be helpful in these coming years, in these years when we shall be able to cut down the size of the medical requirements, and how we can best release medical personnel to such communities to take the load off the overworked men who are there now, especially the men in the older group. I feel very deeply about this and I can assure you that the Navy will do everything possible to help there.

We too are tremendously interested in this proposition of keeping the medical schools going. You have heard a great deal about that from your own officers. I am going to follow with the keenest interest the work that goes on in the committees and in this body in the recommendations that will be made, and not only recommendations, but we must have a follow through on this subject. The military services will need more doctors, but the civilian side of this country will need doctors much more than we in these next ten years, and so it is a very serious thing, one of deep concern to every one of us, that this subject is solved.

I think the most important single thing that you have to decide here today is how we can do this, how we can find a way in this very critical time of war when all the young men are needed for combat service, to get the proper type of young man to come from the services, for that is where they must come from, in the main, and enter our medical schools—the right kind of material so that we have the proper kind of doctors in the years coming along.

I am not going to say any more than just that at this time. There will be a great deal said by men who have a very broad knowledge of this whole subject. I expect to do all that I can to help.

I have to go over now and talk to the ladies, your wives, and I am just thinking what I may say to them. Well, I can, fortunately, talk about much more pleasant subjects than this subject of how to get medical students. But, seriously, I hope that we shall come up with something constructive on this. Let's see if we can't find a way to make the people of this country realize that the health of this nation following this war is going to be one of the most important things that we shall have to look after for some time.

Introduction and Address of Dr. T. C. Routley of Canada

The Speaker introduced Dr. T. C. Routley, Secretary of the Canadian Medical Association, who addressed the House as follows:

Mr. Speaker and Members of the House of Delegates of the American Medical Association: Once again it is my proud privilege to bring before you the greetings of the members of the medical profession of Canada. On another occasion I said to you that we have a law in Canada which says that if a highway has been kept open for twenty-one years unimpeded it then becomes an open highway for all time. I claim that privilege this morning. I have been coming to you for twenty-one years and you have never stopped me, you have received me with open arms, and it would seem to me that in the future, Mr. Chairman, I should never question, as I never have in the past, the cordiality of your welcome, the breadth of your friendship and the desire you have always shown in giving me any information I asked for and in sending back to your brother practitioners in Canada the expression of your good will.

This morning as we meet here the eyes of the world are focused on the United States, Great Britain and Canada, but that focusing point is not in the United States or in Great Britain or in Canada. That focusing point is on the narrow strip of land in Normandy. There, under the direction of your great General Eisenhower, Britishers, Canadians and citizens of this great United States have embarked on the greatest war, the greatest adchievement in the history of the world. I am sure before this great Association adjourns you will join your voices with all the rest of the men of good will in offering prayers for the success of your boys and ours on that venture.

I should like to think, Mr. Chairman, that when this war is over there will be another great meeting of Americans, Britishers and Canadians when you come back to us to repay the visit to us that we have long looked for, when your Association and the British Medical Association and the Canadian Medical Association may meet together in Canada. We will promise you that when and if you come we will extend to you, or at least we shall try to extend to you, the same affectionate greeting that you have always extended to me and my confrères when we have come to you.

May I once again thank you for your reception and promise you that in the next twenty-one years I hope to come back and I am sure that I can look forward to the days which lie ahead between your country and mine, where good neighbors will become better neighbors, if that were possible.

The House recessed at 12:30 p. m. to reconvene at 2 p. m.

Tuesday Afternoon, June 13

The House reconvened and was called to order at 2:15 p. m. by the Speaker, Dr. H. H. Shoulders.

The Speaker announced that under the provisions of the rules adopted yesterday the House was to go into Executive Session at 2 p. m. today, and asked whom the House desired to have present at that session.

Dr. Charles E. Mongan, Massachusetts, presented a list of those who should be permitted to be present at the Executive Session which as amended reads as follows:

Resolved, That the courtesies of the House of Delegates of the American Medical Association in executive session assembled be extended to the presidents of the several constituent state and territorial medical associations, to presidents, attorneys and active and executive secretaries of the constituent state medical associations and component county medical societies, to the editors of state journals, to the secretary of the Southern Medical Association, to the secretary of the Canadian Medical Association and to any Fellow of the American Medical Association present who has been certified as a Fellow in good standing and who has been vouched for by a member of the House of Delegates.

The amended resolution was adopted on motion of Dr. Mongan, seconded by Dr. E. G. Wood, Tennessee, and carried.

Executive Session

The Sergeants-at-Arms polled the House, after which the House went into Executive Session at 2:25 p. m., on motion of Dr. R. W. Fouts, Vice Speaker, seconded and carried.

Report of Reference Committee on Executive Session

Dr. Louis A. Buie, Chairman, presented the following report:

1. Resolution from National Medical Association: A resolution was presented to the Board of Trustees by the National Medical Association and referred by the Board to the House of Delegates without recommendation, which reads as follows:

WHEREAS, The present emergency has necessitated the induction of a large number of physicians into the armed forces of the United States and the number of Negro physicians for the care of their population was already too few before our entrance into the war in those sections of the country where the majority of the Negro citizens reside; and

WHEREAS, An opportunity for the scientific advancement of the Negro physicians, particularly in the South, is urgently needed; and

WHEREAS, The Negro physicians in that section of the United States are at present, because of constitutional or other reasons, excluded from many of the constituent societies of the American Medical Association; and

WHEREAS, In the present emergency an opportunity should be given by the aforementioned constituent societies to such Negro physicians as are qualified and who are members of the National Medical Association, to join the American Medical Association; and

WHEREAS, Many of the constituent societies of the American Medical Association, both South and North, have shown an increasing sympathy and helpfulness in the elevation of the standard of medical practice among the Negro physicians by allowing them use of their libraries, attendance at their scientific meetings and exhibits and the opportunity of practicing in municipal hospitals; we, the Liaison Committee, duly accredited and representing the National Medical Association; hereby

Resolve, That an appeal be made through the Board of Trustees and the House of Delegates of the American Medical Association to its constituent societies to continue and enlarge the opportunities for the elevation of the standard of medical practice among our Negro physicians by (1) Increasing municipal, county and state hospital facilities in which the Negro physician may practice; (2) allowing the members in good standing of the National Medical Association to become members of the constituent societies of the American Medical Associatin to the end that members of the National Medical Association, both South and North, may become members of the American Medical Association and thus enjoy the opportunities of the scientific features of the conventions and partake more fully of the benefits of organized medicine; (3) until such changes as are necessary in the constitutions of the constituent societies of the American Medical Association can be brought about in those constituent societies which now exercise a bar to the membership of Negro physicians, that members of the National Medical Association be allowed the privilege of Associate Membership in the American Medical Association.

Respectfully submitted,

LIAISON COMMITTEE, NATIONAL MEDICAL ASSOCIATION.
DR. CLARENCE H. PAYNE, Chairman.
DR. T. M. SMITH, President.
National Medical Association.
DR. JOHN T. GIVENS, Secretary.
National Medical Association.

Your reference committee has studied the resolution of the National Medical Association with interest and sympathy. It feels that the Negro physicians of this country should be offered every possible opportunity to improve their medical qualifications. It would urge component societies to extend all aid that is practical to the Negro physicians in their communities to the end that the quality of service rendered by them to their people may be steadily improved. It is recognized, however, that the decision as to membership in the component county medical societies or on hospital staffs is outside the jurisdiction of the American Medical Association and is a matter of local concern.

2. Resolutions on Council on Medical Service and Public Relations: Your reference committee has considered the Resolutions on Council on Medical Service and Public Relations introduced by Dr. J. R. Miller, Connecticut, which read as follows:

WHEREAS, The Council on Medical Service and Public Relations that was authorized by this House of Delegates at its annual meeting in 1943 has been created and is engaged on the program prescribed by the House of Delegates; be it now

Resolved, That this House approve and commend the activities and program of the Council on Medical Service and Public Relations as outlined in its several reports; and be it

Resolved, That this House urge the Board of Trustees of the Association to give ample financial support to the Council on Medical Service and Public Relations in order that its services may be extended and become more useful to the profession of medicine; and be it further

Resolved, That the Council on Medical Service and Public Relations be empowered to administer and direct the public relations activities of the American Medical Association that have to do with medical service and legislation.

Your reference committee has considered the resolutions of Dr. Miller of Connecticut and recommends the approval of the first and second portions of the resolutions and offers the following as a substitute for the third portion of the resolutions:

Resolved, That the Board of Trustees be urged to give early consideration to defining the status of the Council on Medical Service and Public Relations.

3. Resolutions on Secretary and on Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: Your reference committee has given careful consideration to the resolutions from the California Medical Association dealing with the work of the Board of Trustees and the officers of the Association, which read as follows:

RESOLUTION ON SECRETARY OF THE AMERICAN MEDICAL ASSOCIATION

Resolved, That the Secretary of the American Medical Association be commended for his long, faithful and valuable service to American medicine and be assured of our affection and that the Board of Trustees be memorialized to appoint him as Secretary Emeritus for life on the expiration of his present term of office.

RESOLUTION ON EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

WHEREAS, The medical profession in America finds itself facing the most critical period of its existence; and

WHEREAS, Because of lack of understanding of basic issues and problems by certain officers of the American Medical Association, public opinion is turning against organized medicine; and

WHEREAS, These changes of public opinion allow various and certain pressure groups to advance their own selfish causes; and

WHEREAS, The political adherents of socialized medicine have seized on the rising tide of public criticism against organized medicine in an effort to accomplish their own desires; and

WHEREAS, The unnecessary continuous defensive attitude of some of the officers of the American Medical Association makes it impossible for them to take leadership in bringing about proper general understanding of the real public needs with respect to medical care and progress; be it

Resolved, That the House of Delegates of the American Medical Association requests the Board of Trustees to replace the present Editor of THE JOURNAL.

Never before has American medicine been so needful as now of unity. The desire to extend the high quality of medical service to all the people at a reasonable cost is the objective sought by all of us. Your committee is convinced that this can be attained more certainly if physicians throughout the nation would give their loyalty and support to those selected by this House of Delegates as members of the Board of Trustees and to the representatives selected by the Board itself.

Your committee commends the loyalty and the efficiency with which these officers have for many years served the Association in carrying out the policies established by the House of Delegates. Your committee would also commend the Board of Trustees of the Association for its judgment and wisdom in the management of the affairs of the Association.

Therefore the Reference Committee on Executive Session recommends that these resolutions be not approved.

4. Resolution on Washington Office: The following resolution was considered by your reference committee: Be it

"*Resolved*, By the house of delegates of the Idaho State Medical Association in session May 22, 1944, that we most heartily commend the action of the American Medical Association in opening an office in Washington, D. C., through which information relative to medical affairs may be freely furnished and legislative data relayed back to the profession, to the end that such reciprocal action may continue to support and enhance the high standard of medical care furnished to the American people. Therefore we petition the House of Delegates of the American Medical Association to take such action as may be necessary to limit the activities of the Editor to the editorship of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION."

This resolution, submitted by the Idaho delegate, was considered in conjunction with the California and Connecticut resolutions. In view of our recommendations on these two resolutions and the action of the House of Delegates, your reference committee recommends the rejection of this resolution.

5. Resolutions on Changing the Structure and Enlarging the Field of Activities of the American Medical Association: The following resolutions were referred to your reference committee:

The House of Delegates of the Michigan State Medical Society at its 1943 annual session instructed the Delegates from Michigan to the American Medical Association that they present the following resolutions:

WHEREAS, The American Medical Association in the United States is organized under charter provisions as laid down for organizing similar groups; and

WHEREAS, From the advice received it appears that under the purposes set forth in its Articles of Incorporation this organization is incorporated for the sole purpose of carrying on charitable, educational and scientific endeavor; and

WHEREAS, the advice received, at present, at least, is to the effect that the American Medical Association under its present charter has no right whatsoever to engage in economic or political activities but has only the right to engage in such activities as set forth above and as stated in the provisions of the laws under which this organization is incorporated; and

WHEREAS, The American Medical Association is at present exhibiting a most decidedly defeatist attitude because of these aforementioned provisions and is exhibiting this attitude principally expressed as because of fear of taxation and other fears; and

WHEREAS, The practitioners of medicine who support the American Medical Association desire that this medical organization in addition to the above set forth objectives, concern itself with economic and other aspects of medicine as well; and

WHEREAS, It would seem proper to change the complexion of the organizational setup for the association so that the American Medical Association might be eligible to engage in other than scientific, educational and charitable endeavor and if necessary to pay taxes, which might require the increasing of income or whatnot for this organization; and

WHEREAS, This suggested change should attain a free and untrammeled position for organized medicine in the political and economic structures of these United States of America so that the American Medical Association might assume its place as a force for the benefit of the practitioner of medicine as well as for the benefit of the patient served, realizing that good medicine depends, in part at least, on freedom from fear, which is one of the great freedoms recognized in the New Atlantic Charter, this present fear being fear of persecution and prosecution under the existing setup; be it therefore

Resolved, That the House of Delegates of the American Medical Association proceed to change and amend the organizational and incorporational setup of the American Medical Association so as to permit of economic and political activities being carried on by the American Medical Association; and be it further

Resolved, That the American Medical Association proceed to, if necessary, pay taxes, whatever may be assessed; and be it further

Resolved, That the Board of Trustees of the American Medical Association be requested to take appropriate steps to provide for necessary fiscal readjustment in the financial affairs of the American Medical Association so as to accommodate for such changes.

Your reference committee has given a great deal of consideration to these resolutions. It feels that the resolutions contain valuable suggestions but is not clear as to how these recommendations can be carried out from a practical standpoint. Therefore it recommends that these resolutions be returned to the Michigan State Medical Society for clarification and more specific recommendations.

The first section of the report of the reference committee, dealing with resolutions presented to the Board of Trustees by the National Medical Association, was adopted on motion of Dr. Buie, seconded by Dr. A. A. Walker, Alabama, and carried.

Dr. Buie moved approval of the second section of the report of the reference committee, approving the first two resolutions contained in the Resolutions on Council on Medical Service and Public Relations, and the motion was seconded by Dr. Thomas A. McGoldrick, New York, and carried.

It was moved by Dr. Buie, seconded by Dr. Lloyd Noland, Alabama, and carried, that the substitute offered by the reference committee for the third resolution contained in the Resolutions on Council on Medical Service and Public Relations be adopted.

Dr. Buie moved the adoption of the third section of the report of the reference committee, dealing with resolutions referring to the Secretary and to the Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and the motion was seconded by Drs. A. A. Walker, Alabama, and G. Henry Mundt, Illinois. After discussion by Drs. Dwight H. Murray and E. Vincent Askey, California, and Dr. Buie, Dr. Buie moved that the third section of the report of the reference committee dealing with the resolution referring to the Secretary be adopted. This motion was seconded by Dr. G. Henry Mundt, Illinois, and carried.

It was moved by Dr. Buie, and seconded by Dr. G. Henry Mundt, Illinois, that the third section of the report of the reference committee dealing with the resolution referring to the Editor of THE JOURNAL, be adopted. There was discussion by Drs. Dwight L. Wilbur, California; A. A. Walker, Alabama; Henry A. Luce, Michigan; Allen H. Bunce, Georgia; Thomas S. Cullen, Maryland; William A. Mulherin, Georgia; G. Henry Mundt, Illinois, and Charles Gordon Heyd, Council on Medical Education and Hospitals, during which Dr. Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was given the privilege of the floor on motion of Dr. A. A. Walker, Alabama, seconded by Dr. G. Henry Mundt, Illinois, and carried. A vote by ballot was requested by Dr. Henry A. Luce, Michigan, seconded by Dr. Walter B. Martin, Virginia, and, after discussion by Dr. E. H. Cary, Texas, tabled on motion of Dr. Cary, duly seconded and carried. Dr. Morris Fishbein, on request, addressed the House.

It was moved by Dr. Charles E. Mongan, Massachusetts, seconded by Dr. William A. Mulherin, Georgia, and carried, that there be a rising vote on the adoption of Dr. Buie's motion to approve the third section of the report of the reference committee, dealing with the resolution referring to the Editor of THE JOURNAL. The Secretary announced that the vote was 144 approving that part of the reference committee's report to 9 opposing it, and the Speaker declared that section of the report of the reference committee adopted.

On motion of Dr. Buie, seconded by Dr. Robert E. Schlueter, Missouri, and carried, the fourth section of the report of the reference committee, rejecting the Resolution on Washington Office, was adopted.

Dr. Buie moved that the fifth section of the report of the reference committee, recommending that the Resolutions on Changing the Structure and Enlarging the Field of Activities of the American Medical Association be returned to the Michigan State Medical Society for clarification and for more specific recommendations, be adopted. The motion was seconded by Dr. Walter E. Vest, West Virginia, and carried.

On motion of Dr. Buie, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried, the report of the reference committee was adopted as a whole.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas A. McGoldrick, Chairman, presented the following report:

Your reference committee has received several resolutions from this House which overlap or duplicate others. For that reason your reference committee has grouped many of these together, as our report will show, and their subjects have been covered in the general report on the Council on Medical Service and Public Relations. The resolutions were as follows:

1. Resolutions on Council on Medical Service and Public Relations: These resolutions have been referred also to the Reference Committee on Executive Session, which has reported its recommendation that the matter be referred to the Board of Trustees for action. Your reference committee concurs in that report.

2. Resolutions on Survey of Public Opinion: On these resolutions your reference committee expresses its approval of the value of such researches as requested by the California Medical Association. It recognizes too the value obtained by that association in a survey made by it of the state of California within the past year. There has been recently made a survey of the entire United States by the Opinion Research Corporation at the request of the National Physicians' Committee. This survey with all its findings and conclusions is at the service of the Council on Medical Service and Public Relations. If any additional surveys are deemed needed by that Council it may take steps to secure them. Your committee recommends that these resolutions be disapproved.

3. Resolution on Creation of Department of Public Health: The resolution that the House of Delegates of the American Medical Association request the Congress of the United States to create a Department of Public Health, the head of which department shall be a cabinet officer, and to assign to such department all health activities of the federal government is similar to another resolution which has been approved in preceding years and is again offered for approval to the House.

4. Resolution on Political and Economic Interests of Physicians: The Resolution on Political and Economic Interests of Physicians and a similar resolution from the Silver Bow County (Montana) are covered in the report of the Council on Medical Service and Public Relations.

5. Resolution to Transfer the Emergency Maternal and Infant Care Program to Department of Public Health: Your reference committee recommends approval of this resolution.

6. Resolutions on Maternal and Infant Care to Wives and Infants of Enlisted Men: The resolution, introduced on the part of the Missouri State Medical Association, in reference to medical service to the wives and children of enlisted men in the four lower grades for the period of the war and referring particularly to the method of payment of services, is covered in the Report on the Council on Medical Service and Public Relations.

7. Resolution on Inauguration and Expansion of Voluntary Group Medical Service Plans: The resolution introduced by Dr. Luce of Michigan urges the American Medical Association to encourage the inauguration and expansion of voluntary group medical service plans. This resolution is covered in our report on the Council on Medical Service and Public Relations.

8. Resolution on United Public Health League: Your reference committee feels that, while the United Public Health League may represent the group included in its membership, it cannot adequately represent the remaining 115,000 members of the American Medical Association located in the other forty-two states. Your reference committee recommends that this resolution be not approved.

9. Report of Bureau of Medical Economics: During 1943 the Bureau of Medical Economics continued to stress the soundness of those principles adopted in 1934 and urged the medical profession to continue to be alert to deal with medical service plans. It has recognized the needs and value of prepayment plans in general and their necessary complexity. It has studied compulsory sickness insurance of many countries. It has shown the necessity of standards of medical service. It has referred to the present operation of the prepayment plans in fourteen states of the Union. "The war emergency has brought definite governmental control of education and medical practice and has reduced to an almost dangerous degree the number of physicians serving the civilian population." Your reference committee recognizes the difficulties under which the bureau has worked with decrease of personnel and increased difficulties of obtaining exact information at this time. It recommends approval of this bureau's report.

10. Report of Bureau of Public Relations: Your reference committee notes with interest and approval the many activities that the Bureau of Public Relations and the valuable and successful efforts it has made to furnish accurate information to newspapers, periodicals and news agencies and other mediums of public information. "It has collaborated in the public relations of many national organizations and has aided the war effort by disseminating material from governmental agencies to both the medical profession and the public." It has called special attention to the survey made by the Opinion Research Corporation at the request of the National Physicians' Committee and stressed many valuable deductions from that survey. Your reference committee recommends approval of this report.

11. Report of Bureau of Legal Medicine and Legislation: (*a*) Licensure: Your reference committee approves the suggestions made in regard to medical licensure with the additional statement that regulations for licensure be left to the individual licensing boards. (*b*) Demerol: Your reference committee recommends that this drug be placed under the same regulations as narcotics. (*c*) Obstetrics: While your reference committee approves the general program of care for wives and infants of servicemen, it disapproves the methods of payment. It is convinced that the full control and regulation of this program should be placed completely in the public health department of each state.

Your reference committee commends the action of the Bureau of Legal Medicine and Legislation on its work in keeping physicians informed of laws enacted and legislation pending and in particular on its studies of the activities of the sponsors of the Wagner-Murray-Dingell bill. It recommends the approval of the report.

12. Report of Council on Medical Service and Public Relations: Your reference committee refers to the report of the Council on Medical Service and Public Relations. This report for the past year shows a tremendous amount of work and much accomplishment. The Council has collaborated with the Bureau of Medical Economics, the Bureau of Legal Medicine and Legislation and the Bureau of Public Relations. It has published its studies of pending legislation, especially on the Wagner-Murray-Dingell bill. It has sent semimonthly bulletins of its activities to all component societies and constituent associations, to all state association secretaries and other officers, to members of the House of Delegates and to others to a number exceeding 2,000 names.

"Considerable study has been given to the subject of voluntary insurance diagnostic clinics and medical service bureaus." "It has established an office in Washington, D. C., for the collection of information and data concerning medical care and its distribution, its availability, its costs and its control in various parts of the United States. The information thus collected to be made available to the medical profession and to other appropriate agencies interested in the extension of medical service and the provision of medical care and related subjects."

Your reference committee approves the recommendation that the Board of Trustees prepare a plan whereby students of approved medical schools may become student members of the American Medical Association.

Your reference committee asks the House of Delegates to instruct the Council on Medical Education and Hospitals to take necessary steps to have each approved medical school give an adequate course in medical sociology, medical economics and medical ethics.

The unionization of employees in hospitals might jeopardize the health, safety and lives of patients. Your reference com-

mittee urges strongly the opposition of the House of Delegates to such activities.

Your reference committee recommends approval of the bill introduced by Congressman A. L. Miller of Nebraska which would transfer all government agencies dealing with health to the United States Public Health Service. This recommendation is in harmony with the recommendation previously made that the administration and control of emergency maternity infant care programs be placed in the public health departments of the individual states.

Your reference committee recommends that the House of Delegates do not authorize the reorganization or the amalgamation of the Bureau of Medical Economics with the Council on Medical Service and Public Relations.

Your reference committee feels that the recommendation of the Council be approved and that it be authorized to employ a director of medical prepayment insurance with necessary assistants when and where they may become essential.

Your reference committee reiterates approval of the platform of the American Medical Association adopted by the House six years ago and embodied in the supplementary report of this Council. There is no change in the platform itself. The added explanatory changes offered by the Council elucidate and merit approval. Your reference committee recommends approval of this report.

13. Resolutions on Tuberculosis Control: Your reference committee is in full sympathy with the purposes of the act and the objection of the proposers. It fully recognizes the gravity of the disease and the danger that follows its lack of control. In this proposed act, vast power is given to the central government through the Surgeon General of the United States Public Health Service subordinate in all financial matters to the Federal Security Administration. No money may be appropriated or expended for the purposes of this act without the approval of the Federal Security Administration. The initial appropriation asked for the first year is $10,000,000, and for each year thereafter "a sum sufficient to carry out the purposes of this act." Furthermore, other ways may be provided for attaining the objective, as for example direct aid to needy communities in the Lanham act. Your reference committee recommends disapproval of the resolutions.

Section 1 in the report of the reference committee, concurring in the report of the Reference Committee on Executive Session adopted by the House, needed no action.

The second section of the report of the reference committee, disapproving of Resolutions on Survey of Public Opinion, was adopted on motion of Dr. McGoldrick, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

Dr. McGoldrick moved that section 3 in the report of the reference committee, approving the Resolution on Creation of a Department of Public Health, be adopted, and the motion was seconded by Dr. George W. Kosmak, New York, and carried.

The fourth section of the report of the reference committee, referring to Resolution on Political and Economic Interests of Physicians, is covered in the report of the reference committee on report of the Council on Medical Service and Public Relations.

On motion of Dr. McGoldrick, seconded by Dr. J. F. Hassig, Kansas, and carried, the fifth section of the report of the reference committee, approving the Resolution to Transfer the Emergency Maternal and Infant Care Program to Department of Public Health, was adopted.

The Resolutions on Maternal and Infant Care to Wives and Infants of Enlisted Men, referred to in the sixth section of the report of the reference committee and the Resolution on Inauguration and Expansion of Voluntary Group Medical Service Plans referred to in the seventh section of the report are covered in the report of the reference committee on the report of the Council on Medical Service and Public Relations.

Dr. McGoldrick moved that section 8 of the report of the reference committee, disapproving the Resolution on United Public Health League, be adopted, and the motion was seconded by Dr. Walter E. Vest, West Virginia, and carried, after discussion by Dr. Dwight H. Murray, California.

The report of the reference committee recommending approval of the report of the Bureau of Medical Economics, as contained in section 9, was approved on motion of Dr. McGoldrick, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried.

On motion of Dr. McGoldrick, seconded by Dr. Louis A. Van Kleeck, New York, and carried, section 10 of the report of the reference committee, recommending approval of the report of the Bureau of Public Relations, was adopted.

Dr. McGoldrick moved, and the motion was seconded by Dr. Francis F. Borzell, Pennsylvania, and carried, that section 11 of the report of the reference committee, approving the report of the Bureau of Legal Medicine and Legislation, be adopted.

It was moved by Dr. McGoldrick, and duly seconded, that the twelfth section of the report of the reference committee, dealing with the report of the Council on Medical Service and Public Relations, be adopted. Dr. Louis H. Bauer, New York, remarked that the statement was not quite accurate, as eight supporting items are from the old platform, but the item adopted as a platform is entirely new, namely that the first item is the platform. Dr. McGoldrick stated that with this correction your reference committee recommends the adoption of that platform as embodied in the supplementary report of the Council on Medical Service and Public Relations. The motion to adopt the report as amended was then seconded by Dr. Louis H. Bauer, New York, and carried.

The report of the reference committee contained in section 13, disapproving of Resolutions on Tuberculosis Control, was adopted on motion of Dr. McGoldrick, seconded by Dr. Robert H. Hayes, Illinois, and carried after discussion by Dr. McGoldrick; Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health; Dr. Thomas S. Cullen, Maryland, and Dr. Francis F. Borzell, Pennsylvania.

On motion of Dr. McGoldrick, seconded by Dr. J. F. Hassig, Kansas, and carried, the report of the reference committee was adopted as a whole, after discussion by Drs. Lee O. Frech, Illinois, and Louis H. Bauer, New York.

Presentation and Address of Lieutenant General Robert Kho-sheng Lim

Major General George F. Lull, United States Army, presented Lieutenant General Robert Kho-sheng Lim, Director of Planning of the Medical Department of the Chinese Army, who addressed the House as follows:

Mr. Speaker, Colleagues of the American Medical Association: I feel it is a very great honor to have been asked to come to attend your meeting here today. I feel it an honor because over in China, where we have so few doctors trained in modern medicine, the large majority have been trained in American medical schools. In China today the difficulty that we are facing is largely a lack of trained personnel. We have 2,000 doctors to look after 8,000,000 men. You will no doubt wonder how any medical service can be given, but fortunately we can to some extent apply the principles of scientific medicine or, better, scientific health, and by putting forward many of the principles and methods that you have taken in this country for your own purposes during the war (I refer to the policy of putting prevention of disease foremost) I believe that we have been able to sustain the health of our armies to a degree that is really surprising. I won't take up your time. I want again to thank you for your kindness and the privilege of being able to attend the meeting and to speak here.

On behalf of the House the Speaker expressed to General Lim the appreciation of the House for his presence.

Resolution Requesting Dr. Roger I. Lee to Resign as Trustee Immediately, Thereby Removing Constitutional Bars to His Eligibility as Candidate for President-Elect

Dr. Floyd S. Winslow, New York, presented the following resolution, which the House, sitting as a Committee of the Whole, on motion of Dr. Winslow, seconded by Dr. George W. Kosmak, New York, and carried, considered:

WHEREAS, This is a critical period in American medicine; and

WHEREAS, Able, constructive leadership has never been more necessary than at the present time; and

WHEREAS, The present chairman of the Board of Trustees, with ten years' experience on the Board, is better qualified than any one else to assume the leadership of the American Medical Association; and

WHEREAS, The provisions of the Constitution and By-Laws of the Association render any general officer of the Association ineligible for election as President-Elect; and

WHEREAS, The term of office of the present Chairman of the Board of Trustees expires at the close of the present session, and having served two terms he is ineligible for reelection as Trustee and, therefore, his ineligibility is a technicality of a few hours; therefore be it

Resolved, By the House of Delegates of the American Medical Association that it calls on Dr. Roger I. Lee, Chairman of the Board of Trustees of the American Medical Association, to resign his office as Trustee immediately, thereby removing all constitutional bars to his eligibility as a candidate for the office of President-Elect.

With Dr. Winslow presiding over the House as a Committee of the Whole, the resolution was adopted by the Committee of the Whole, on motion of Dr. James Q. Graves, Louisiana, seconded by Dr. George W. Kosmak, New York, and carried.

On motion of Dr. Louis H. Bauer, New York, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the Committee of the Whole rose to report to the House.

The Speaker resumed the Chair and Dr. Winslow reported that the Committee of the Whole recommended adoption of the resolution referring to Dr. Roger I. Lee. On motion of Dr. George W. Kosmak, New York, seconded by Dr. Thomas A. Pitts, South Carolina, and carried, the recommendation of the Committee of the Whole was adopted.

Tuesday Afternoon—Continued

On motion of Dr. R. W. Fouts, Vice Chairman, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the House went into regular session at 4:20 p. m., with the Speaker, Dr. H. H. Shoulders, presiding.

Resolution on Neuropsychiatric Casualties

Dr. H. A. Luce, Michigan, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, President-Elect Herman L. Kretschmer gave special attention in his address to the neuropsychiatric casualties of our country which have developed as a result of the war; and

WHEREAS, In his wisdom and judgment he indicated that the House of Delegates of the American Medical Association should take some action toward the treatment and consideration of neuropsychiatric disabilities; be it

Resolved, That the House of Delegates request the President of the American Medical Association for the year 1944-1945 to appoint a committee and take such steps as in his judgment may seem to be indicated in the consideration of the above referred to problems.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. E. S. Hamilton, Chairman, presented the following report:

1. Conference with Board of Trustees of American Optometric Association: Your reference committee has reviewed the report of the conference with the Board of Trustees of the American Optometric Association, and carefully read their statement presented in the Handbook. The attention of the House of Delegates is especially directed to article 4 of their statement, as follows: "4. Mutual professional respect and support; the broadening of the bases of contact and scope to the end that all practitioners who are concerned with matters of eyes and eyesight and the problems of vision from any corrective or alleviative standpoint may be included in and of necessity become integral parts of such a cooperative association of mutually interested and allied professions and health services."

In view of the action of the House of Delegates in 1935, when consultation between oculists and optometrists was disapproved, said action being affirmed in 1936 and 1940, your reference committee recommends that the request of the American Optometric Association for conference with the representatives of the American Medical Association be denied.

2. Legislative Recognition of Cultists: Your reference committee has thoroughly reviewed the report as printed in the Handbook. It is heartily in accord with the statement of the Council on Medical Education and Hospitals that "only graduates of approved schools of medicine should be licensed in the practice of medicine."

Your reference committee approves the entire report and recommends its adoption by the House of Delegates.

Respectfully submitted,

EDWIN S. HAMILTON, Chairman.
OLIN H. WEAVER.
J. B. LUKINS.
ROBERT E. SCHLUETER.
FRANCIS J. SAVAGE.

It was moved by Dr. Hamilton, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried after discussion by Dr. Walter B. Martin, Virginia, and Dr. Bedell, that the first section of the report of the reference committee, dealing with Conference with the Board of Trustees of American Optometric Association, be adopted.

Dr. Hamilton moved the adoption of section 2 of the report of the reference committee, approving the report of the Board of Trustees on Legislative Recognition of Cultists as printed in the Handbook. The motion was seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

On motion of Dr. Hamilton, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the report of the reference committee was adopted as a whole.

Report of Reference Committee on Miscellaneous Business

Dr. H. A. Luce, Chairman, presented the following report, which on motions of Dr. Luce, duly seconded and carried, was adopted section by section and as a whole:

1. Rereferred Resolution on Dr. Horace Wells of Hartford, Conn.: This resolution has been considered by your reference committee, which is aware of the controversial nature of priority claims regarding the initial application of anesthetic agents.

Your reference committee wishes to give honor to whom honor is due and to deny to no one seniority rights and recommends the substitution of the following resolution for the one introduced by Dr. Miller.

"WHEREAS, 1944 marks the centenary of the application of a practical method of anesthesia by nitrous oxide by Dr. Horace Wells of Hartford, Conn.; therefore be it

"*Resolved*, That the House of Delegates of the American Medical Association commends and endorses the celebration during 1944 of the centenary of this application of nitrous oxide anesthesia by Dr. Horace Wells of Hartford, Conn."

2. Resolution on Simplification and Standardization of Insurance Forms: Your committee approves the resolution as introduced with the following changes: substitution of the word "requested" for the word "instructed" in the last paragraph and the changing of the latter part of the paragraph beginning "with a view" to read "with a view toward developing simplification and standardization of forms" so that the resolution as approved by your reference committee reads: "*Resolved*, That the Board of Trustees of the American Medical Association shall be requested to arrange for a series of conferences between representatives of the American Medical Association and representatives of private insurance carriers with a view toward developing simplification and standardization of forms."

Respectfully submitted,

HENRY A. LUCE, Chairman.
CHARLES G. STRICKLAND.
LUCIUS F. DONOHOE.
ROBERT A. PEERS.
ROBERT H. HAYES.

Resignation of Dr. Roger I. Lee as Trustee

The Speaker called on Dr. Roger I. Lee, Chairman Board of Trustees, who addressed the House as follows:

Mr. Speaker, Members of the House: As a Delegate for a number of years and as a Trustee for ten years, I have always with the greatest humility bowed to the action of the House of Delegates. I hereby bow once more to the action of the House of Delegates and I resign as Trustee.

On motion of Dr. George W. Kosmak, New York, seconded by Dr. Floyd S. Winslow, New York, and carried, the resignation of Dr. Roger I. Lee as Trustee was accepted.

On motion of Dr. T. K. Gruber, Michigan, duly seconded and carried, the House recessed at 4:40 p. m. to convene at 12 noon on Thursday, June 15.

Third Meeting—Thursday Afternoon, June 15

The House of Delegates was called to order at 12:10 p. m. by the Speaker, Dr. H. H. Shoulders.

The Speaker called on a veteran member of the House, Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, who delivered a prayer as follows:

Oh, Lord God of Hosts, Who has safely brought us to the beginning of this day, we beseech Thee to look down on these, Thy servants, especially those in the armed forces who are fighting for the restoration of peace. Theirs is a mighty battle. Give them courage, guide the sick and wounded to a happy issue out of all their afflictions that they may live on to fight for the Cross of Jesus. We pray, oh Lord, that the captives and the suffering ones may be restored to normal life and happiness. We pray for all sorts and conditions of men who need strength and greater faith in Thee.

May this great country of ours maintain freedom and liberty and righteousness of life. May medical science and art forever have the background of humanity. Bless, oh Lord, our loved ones in special danger and return them to their homes in Thy love and service.

Again we commend to Thy care those who are in sorrow, sickness or adversity. We pray for the peace that passeth all understanding. May faith abide with us and right be our guiding star.

We open this meeting with the belief that God will lead us on to a better life for all humanity. It is promised that when two or three are gathered together in Thy name Thou wilt grant their requests. God hear us and have mercy on us. Christ hear us and have mercy on us in this raging conflict. Preserve us in body and soul, through Jesus Christ our Lord, to whom with Thee and the Holy Ghost be all honor and glory. Amen.

Presentation and Address of Major General David N. W. Grant

On request of the Speaker, Dr. Frank H. Lahey, Past President, presented to the House Major Gen. David N. W. Grant, Air Surgeon, Army Air Forces, who addressed the House as follows:

Dr. Paullin, Dr. Kretschmer, Mr. Chairman and Members of the House of Delegates: It was my pleasure and my privilege last year on a similar occasion and my duty to report to you what we in the Army Air Forces are trying to do with our medical officers. I reported to you last year that we were endeavoring by every means possible to use the proper man in the proper place and to economize on doctors within the limits of the necessity. At that time I reported that some 97 per cent of the specialists were promptly assigned to the Air Forces, and I am happy to report that this figure remains approximately the same and that the same interest is being carried on within the medical services of the Army Air Forces to continue the proper assignment.

Many problems have appeared in the last year. Now that we are dealing with war casualties there is one which is of very vital concern. Personally I am disturbed, very much disturbed, over what to me is a great deal of loose talk over the so-called psychoneurotic. As you probably know, the Army Air Forces have been pioneering in convalescent and rehabilitation work for the past eighteen months and we have got eighteen months' experience behind us. Our records show that we are returning to duty approximately 85 per cent of our people, be they war casualties or the so-called psychoneurotic. We are vitally concerned with this so-called flying fatigue, call it what you may —some speak of it as a psychoneurosis in relation to flying.

Of the combat people returned from the theaters with pronounced operational fatigue, 68 per cent have been put in condition to return to combat duty (I don't think you would call that psychoneurotic) and 85 per cent of all of them are returned to flying duty.

I don't think we have any right to label these boys psychoneurotic when they are normal individuals, the same as we are, who have been put under tremendous stress, and they need rest and, you might say, medical guidance. We in the Air Forces are greatly disturbed over the trend of loose publicity with relation to the term "psychoneurosis."

This brings us to the point of postwar planning. You have no doubt seen in the papers General Arnold's announced policy in reference to the men in the Air Forces, that he is endeavoring to return them to civil life in as good condition as when they came, or in better condition, as far as possible. That covers the people in the Army Air Forces; it covers all branches of people in the Army Air Forces.

It naturally follows that you will want the question answered: What about these doctors in the Army Air Forces? What is your postwar plan? I can tell you that for two years the office of the Air Surgeon has been working on and revising postwar plans in reference to the doctors who are serving with the Army Air Forces, that these plans call for training or postgraduate study for any medical officer who so desires such training on his separation from the service. I stated here last year, and we still have that policy, that our one aim is to return these doctors to civil life at least as good doctors and, we hope, better doctors.

I am not prepared at this time to tell you how this will be done, whether in civilian institutions or Army institutions, because from the civilian institution standpoint legislation will have to be passed. I can only say that it is written into the broad plan of the Army Air Forces today, which covers the medical people serving with the Army Air Forces.

For your information, to show you what we are trying to accomplish in this, I might mention to you that during the last year we have given a few over 500 young men six months' recognized resident training, and 30 per cent of that number we have continued on to a full year of recognized resident training.

I need only add that it is the policy of the Army Air Forces that this training continue and that we are continuing it at this time, and certainly as long as I am in office it will be continued.

Presentation and Address of Major General Norman T. Kirk

On request of the Speaker, Dr. Fred Rankin, Past President, presented to the House Major General Norman T. Kirk, Surgeon General of the United States Army, who addressed the House as follows:

Thank you very much. It is a pleasure and an honor again to address the Delegates of the American Medical Association. I was told three minutes ago that I was going to do this.

Maybe we had better go into the organization of the Medical Department of our Army. Before the Army was reorganized, just prior to the war, there was the Surgeon General of the Army on the staff of the Chief of Staff. Then the Army was reorganized into the Ground Forces, the Air Forces and the Service Forces. The Surgeon General of the Army became the Surgeon General of the Army Service Forces, with General Grant appointed as Air Surgeon of the Air Forces, and another medical officer, who was initially General Blessé, who has served two years in the North African campaign, now serving with the Ground Forces. So the Medical Department has been split more or less three ways at home.

Overseas, the medical installations in each theater operate under a surgeon in that theater who is on the staff of the commanding general of that theater. The medical department procured early on their own, later through Assignment and Procurement, medical officers and nurses for the armed forces. The air forces in this general procurement program procured medical officers for those forces. All medical supplies that have been purchased—and it has been a big job—for the armed forces have been purchased out of the Office of the Surgeon General and distributed under the direction of the officer or civilian in charge of medical supplies, and we have been classified in many departments as the supply branch. That is only a small part of our job, yet General Somervell recently, on a trip around the world, came back and said that the best supply job done in all the theaters was done by the medical department. That is a lot from General Somervell. He is a fine boss, he is a great soldier; he calls a spade a spade. If one isn't pro-

ducing, one is in trouble. We were in trouble early in the supply game. Manufacturers didn't produce things that the medical department needed. They didn't make instruments; they all came from Germany. Many other things were required in this great expansion of ours that were not available, were not manufactured, so I can tell you today that the medical department is leading not only overseas but at home in the supply game.

Hospitalization: General Grant and I had an opportunity to visit England in March. General Hawley has been surgeon of that theater; he has been over there some two years, has planned and built it and has done a splendid job. There have been wonderful hospitals constructed, some turned over to us by the British, others built of brick, of hollow tile or huts that are well sealed, and the hospitals are there, with many beds, thousands of beds—I can't tell you how many—to be ready for D-Day, which has already happened. There are abundant medical supplies over there, and the personnel staffing those station and general hospitals are doing a grand job. I wish you could see them. You would be proud of them, particularly these affiliated units that have been working for the past two years.

Hawley has cheated a bit on his policy of evacuation back home. He has kept those patients over there so that those people would have something to do in those grand units. We have some femurs over there being returned to duty in the theater, and we all know it takes six to eight months to get a compound femur back to duty. He set up over in that theater and took leadership, and it is better than we have.

I can't agree with General Grant that psychoneurosis isn't a problem in the Army and shouldn't be talked about. I can't state statistics, I am not permitted, but they have been stated as to the number of men that have been discharged from the Navy, from the Army, from the Air Forces, because of psychoneurosis. Over there we saw something that was being done to train medical officers to take care of battle fatigue, whether it was the normal or the psychoneurotic that got that far, and it is a wonderful job, better than we are doing at home. We saw men in there being given barbiturates, put to bed, fed, who were 15 or 20 pounds underweight and were gaining a pound a day under that treatment, and they were reconditioned. In that theater there has been set up a better reconditioning unit than anywhere at home or abroad. A grand job is being done over there.

We visited the Eighth Air Force that had been bombing Germany. General Grant and I had an opportunity to be there when a flight returned to one of those bases on the third day over Berlin and to see what casualties came back. We wanted to see how it happened at the front. It so happened that every plane came back. The only casualty was a man with a piece of flak that had gone through the back of his hand and had taken a bit of skin off his hand.

In all those airfields there were set up excellent dispensaries to give first aid to the casualties that flew back in those bombers. Then they were evacuated to the station hospitals set up by the ASF under Hawley, where there were wards set up to treat shock day or night when these casualties came back. We saw some of those casualties that happened the night before. We saw one man who had lost a kidney. The laminae had been taken off of three lumbar vertebrae. The General over there who heads up the surgery of that air force has done a grand job in building armor to protect these men from low velocity missiles; it buttons up the side, but this missile went through. It required the removal of this man's kidney. The spinal cord was temporarily out. The fellow was doing excellently. We saw many other battle casualties that were excellently handled there. They stayed in those station hospitals that were set up in that Eighth Air Force and then were transferred to the general hospital. They were doing a grand job.

All hospitalization overseas is done by ASF. They are brought home in two ways. Over there the air service has done a grand job in evacuating casualties from the theater; they have evacuated more than 180,000 casualties, and I don't believe that the campaign could have gone on if it hadn't been for evacuation of wounded from the front back to our bases. It is a hundred mile haul by ambulance and then they are put in airplanes and brought up. There is a three hour haul then by air to our bases. There wouldn't have been railroads or hospital trains to get those patients back. That is the story in that theater, and that is the story in the Southwest Pacific. A grand job has been done in evacuation by air of our battle casualties.

They come home from these general hospitals that I have told you about by hospital ship or troop ship and by air. These grand four motored airplanes that are now available, I am informed by General Grant's office, are more and more bringing back battle casualties and sick from overseas. When they come back, all battle casualties are received in our general hospitals, ASF general hospitals, for definitive care for their war wounds. A grand job is being done in those hospitals here at home. I have visited a lot of them, and so have many of you.

There are sixty of those hospitals with more than a hundred thousand beds that have been set up and are ready to take care of what comes from this push across the Channel. Plans have been made to take care of convalescents, to augment those beds if we need more, and for the reconditioning that is also going on in the Army service.

I think you might be interested in the setup of plans for D-Day when this push came across and we really started to fight this war. We have just started to fight this war. We are ready to pour men in there to win this war, and the medical department has a plan that is backing up those gallant troops that are going to make this drive to win the war.

When those units went over they attached medical companies. Two medical aid men went forward with each company that went into attack to supply first aid to the first men wounded. The litter bearers came forward to carry those men back to the aid stations that were set up on the beachhead when the battalion first landed. Then they were put on certain selected LST boats that brought over tanks and infantry and whatnot, manned by Navy personnel, Navy medical officers and Corps men who gave first aid in these LSTs, which before they left the home shore were supplied with the necessary medical equipment for dressing stations and operating rooms aboard the hospital ships that carried these battle casualties and battle sick back to the home shore, where there were ambulances and hospital trains available to take them to hospitals.

As those troops advanced, the medical battalion came in with its collecting stations and clearing stations, and those clearing stations were supplemented by surgical teams to take care of the nontransportable patients. As they advanced and a division came ashore, platoons of field hospitals and evacuation hospitals landed on the beach head to give primary surgery on the beach head rather than transport them back by boat to England for primary surgery. And so the plan is in operation as it has been studied and developed to take care of the battle casualties that ensue from this invasion.

There are general hospitals there in England that will go forward and set up in France. These units have been there operating for a year, two years, and then have been pulled out, ready to go up with their equipment to set up general hospitals in France, while newer units come over and take over the job they were doing in England. That is the plan of medical service in that theater.

I want to thank the American Medical Association for the help that it has given the Surgeon General's Office in selecting specialists and making available this information about doctors as to what they can do and not what they think they can do. With the help in our office of such men as General Rankin and Hugh Morgan and others from you who have come in to assist us, those men have been placed on the jobs where they are doing excellent work. With 40,000 men in the Medical Department and with excellent care that we are seeing that the sick and wounded are receiving, it isn't by chance that this all happened. It was planned, and the right man was put in the right job to do that job.

I thank you for allowing me to talk to you. I am afraid I have talked too long.

Report of Reference Committee on Credentials

Dr. Deering G. Smith, Chairman, reported that there are 170 Delegates registered out of a possible total of 175, which your reference committee believes is a wonderful record in these troublous times.

Roll Call

The Secretary called the roll and announced that more than a quorum had responded.

Presentation of Minutes

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Thomas A. McGoldrick, New York, and carried, the House dispensed with the reading of the minutes.

Report of Reference Committee on Medical Education

Dr. Charles H. Phifer, Acting Chairman, presented the following report, which on motions of Dr. Phifer, duly seconded and carried, was adopted section by section and as a whole:

1. Resolution Requesting Board of Trustees to Prepare a Concise Statement of Achievements of the Medical Profession for Submission to Boards of Education: Your reference committee is in accord with the recommendation of the Board of Trustees that the Resolution Requesting the Board of Trustees to Prepare a Concise Statement of Achievements of the Medical Profession for Submission to Boards of Education be not approved, since the intent of the resolution has been accomplished through publication of material on the achievements of medicine in practically every issue of HYGEIA and also through the several histories of medicine which have been published recently.

2. Resolution on Lifting of Sex Discrimination from Young Women Desiring to Study Medicine: Your reference committee recommends that this resolution be not approved. It is the belief of the reference committee that here is no large reservoir of qualified premedical women from which schools could select substantially increased numbers of women medical students. With regard to alleviating or aiding the financial status of women and other civilian medical students, the deans of medical schools are acquainted with various loan and scholarship funds. This information should be made available to civilian students. Your reference committee recommends that this resolution be referred to the Council on Medical Education and Hospitals with instructions that it give every consideration to the problem.

Respectfully submitted,

WILBURT C. DAVISON, Chairman.
THOMAS S. CULLEN.
CHARLES H. PHIFER.
FRANCIS F. BORZELL.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas A. McGoldrick, Chairman, presented the following report, which was adopted section by section and as a whole, on motions of Dr. McGoldrick, duly seconded and carried:

1. Resolution on Neuropsychiatric Casualties: Your reference committee recommends that the resolution introduced to carry out the suggestions of President-Elect Herman L. Kretschmer that the President of the American Medical Association for the year 1944-1945 appoint a committee to take such steps as may seem to be indicated in the consideration of the subject of neuropsychiatric casualties due to war be adopted.

2. Resolution on Consolidation of Federal Health Activities in a Single Federal Department: Your reference committee feels that the work described in H. R. 4371 could best be done through the state and local authorities with monies alloted to them by the Secretary of Labor rather than through the United States Public Health Service as suggested in this resolution. Your reference committee recommends disapproval of the resolution.

3. Resolutions on American Medical Association Legislative and Public Relations Activities: The matter introduced by Dr. Dillinger of Indiana, on behalf of the Indiana State Medical Association, concerning the organization of an office for the Council on Medical Service and Public Relations in Washington, D. C., has been covered in our report on this Council and needs no further action.

Respectfully submitted,

THOMAS A. MCGOLDRICK, Chairman.
FLOYD NOLAND.
H. G. HAMER.
WILLIAM R. MOLONY SR.
ROBERT L. ANDERSON.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. E. S. Hamilton, Chairman, presented the following report, which on motion of Dr. Hamilton, seconded by Dr. William A. Mulherin, Georgia, and carried, was adopted:

Resolutions on Speakers' Bureau: Your reference committee is wholly in accord with these resolutions and recommends that they be approved.

Respectfully submitted,

EDWIN S. HAMILTON, Chairman.
OLIN H. WEAVER.
J. B. LUKINS.
ROBERT E. SCHLUETER.
FRANCIS J. SAVAGE.

Resolutions on Compensation for Full Time Health Officers from the Section on Preventive and Industrial Medicine and Public Health

Dr. Arthur J. Bedell, Section on Ophthalmology, in behalf of Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, who was called home on yesterday, presented the following resolutions from the Section on Preventive and Industrial Medicine and Public Health, which, on motions of Dr. G. Henry Mundt, Illinois, seconded by Dr. George W. Kosmak, New York, and carried, were referred to the Board of Trustees:

WHEREAS, The practice and administration of public health has become a specialty within the practice of medicine for which more and more physicians are specially trained and in which they pursue lifetime careers; and

WHEREAS, The safeguarding and the improvement of the health of the people have always been a primary concern of the medical profession, and our responsibility in this field is so important that it has attracted and should continue to attract some of the ablest members of our profession; and

WHEREAS, Health officers have often devoted their lives to this field at the cost of considerable personal sacrifice, such as inadequate compensation, political interference, insecure tenure of office, lack of facilities for research or opportunities for personal advancement; and

WHEREAS, The American Medical Association has pointed out the fact that many sections of the country are without the benefits of full time trained health officers and that there is great need for more well trained physicians in this field; now therefore be it

Resolved, That it is the considered opinion of this Association that full time health officers and other full time medical specialties in the public health field who have been specially trained for their highly important work should be compensated for their services in a manner comparable with the net professional income of the good surgeons or internists of the community; and further

Resolved, That adequate compensation and reasonable security in tenure of office will be necessary before physicians with proper qualifications to assume the heavy responsibility of protecting and improving the health of the public will be available in sufficient number to meet the nation's existing needs.

These resolutions were passed by the Section on Preventive and Industrial Medicine and Public Health on Wednesday morning, June 14, at the Stevens Hotel, Chicago.

Resolution on Formation of Anesthesia Study Commissions

Dr. Henry S. Ruth, Section on Anesthesiology, presented the following resolution adopted by that section, which was adopted on motion of Dr. Ruth, seconded by Dr. F. Leslie Sullivan, New York, and carried:

WHEREAS, There has been introduced a variety of anesthetic drugs and methods during recent years; and

WHEREAS, A more rapid and accurate method of evaluating these new anesthetic practices is desirable; and

WHEREAS, There is accumulating evidence that misinformation exists concerning safe administration of anesthetic drugs; and

WHEREAS, It has been demonstrated that anesthesia study commissions are of educational value to the medical profession; now therefore be it

Resolved, That the American Medical Association should encourage the formation of anesthesia study commissions within the state, county and other similar medical societies.

ELECTION OF OFFICERS

The Speaker declared the next order of business to be the election of officers.

Election of President-Elect

Dr. Walter G. Phippen, Massachusetts, nominated Dr. Roger I. Lee, Boston, for President-Elect, and the nomination was seconded by Drs. A. A. Walker; Lloyd Noland, Alabama; Thomas A. McGoldrick, New York; John H. O'Shea, Washington; Edward R. Cunniffe, New York, and William A. Mulherin, Georgia; the Michigan delegation; Drs. Edwin S. Hamilton, Illinois; H. B. Everett, Tennessee; Thomas A. Pitts, South Carolina; Robert A. Peers, California; James R. Miller, Connecticut; Deering G. Smith, New Hampshire; Harry V. Paryzek, Ohio; J. Morrison Hutcheson, Virginia; A. W. Adson, Minnesota; Felix J. Underwood, Mississippi; E. H. Cary, Texas; James R. McVay, Missouri; Robert L. Anderson, Pennsylvania; Edward J. McCormick, Ohio; James P. Wall, Mississippi, and Maurice Hardgrove, Isthmian Canal Zone, and others.

Dr. A. A. Walker, Alabama, moved that the nominations be closed, and the motion was seconded by Dr. George W. Kosmak, New York, and Dr. William A. Weston, Section on Pediatrics, and carried.

Dr. A. A. Walker, Alabama, moved that the Speaker of the House or the Secretary be empowered to cast the vote of this House for the next President-Elect, and the motion was seconded by Dr. H. B. Everett, Tennessee, and carried unanimously.

The Secretary cast the ballot of the House for Dr. Roger I. Lee, Boston, for President-Elect of the American Medical Association for the ensuing year, and the Speaker declared Dr. Lee so elected.

Election of a Vice President

Dr. E. H. Cary, Texas, nominated for Vice President Dr. Stanley J. Seeger, Texarkana, Texas, who has done an excellent job as Chairman of the Council on Industrial Health, and the nomination was seconded by Dr. James C. Sargent, Wisconsin.

Dr. William Weston, Section on Pediatrics, moved that the nominations be closed, and the motion was seconded by Dr. William A. Mulherin, Georgia, and carried.

On motion of Dr. E. H. Cary, Texas, seconded by Dr. James C. Sargent, Wisconsin, and carried, the Secretary cast the ballot of the House for Dr. Stanley J. Seeger, Texarkana, Texas, to serve as Vice President of the American Medical Association for the ensuing year.

The Speaker declared Dr. Stanley J. Seeger duly elected Vice President of the American Medical Association for the ensuing year.

Address of President-Elect Roger I. Lee

Dr. William R. Brooksher, Arkansas, escorted Dr. Roger I. Lee, newly elected President-Elect of the American Medical Association, to the platform and Dr. Lee addressed the House as follows:

Mr. Speaker, Members of the House: I would be far less than human if I were not deeply touched by this tribute. To be President-Elect of the greatest profession in the world in the greatest country in the world is something that is just beyond words. I am particularly touched by the fact that this House of Delegates, with whom I have worked ten years as a Delegate and another ten years on the Board of Trustees, should be the agency which did this. It is one thing to be elected by those who don't know you; it is a particular tribute to be elected by your friends who know you so well, and I pledge whatever is within me to the medical profession and to the American Medical Association.

Election of Secretary

Dr. Wells P. Eagleton, New Jersey, nominated Dr. Olin West, Chicago, to succeed himself as Secretary of the American Medical Association, and the nomination was seconded by Drs. George W. Kosmak, New York; Edwin S. Hamilton, Illinois; William A. Mulherin, Georgia; Andrew F. McBride, New Jersey; Edward R. Cunniffe, New York; William Weston, Section on Pediatrics; Lloyd Noland, Alabama; John Z. Brown, Utah; H. B. Everett, Tennessee; Robert A. Peers, California, and Walter G. Phippen, Massachusetts, and others.

Dr. A. A. Walker, Alabama, moved that the nominations be closed, and the motion was seconded by Dr. Burt Shurly, Section on Laryngology, Otology and Rhinology, and carried.

Dr. A. A. Walker also moved that the Speaker cast the ballot of the House for Dr. Olin West as Secretary, and the motion was seconded by Dr. Andrew F. McBride, New Jersey, and unanimously carried, and the Speaker cast the ballot of the House for Dr. Olin West and declared him elected to the office of Secretary of the American Medical Association for the ensuing year. Dr. West addressed the House briefly.

Election of Treasurer

Dr. R. L. Sensenich, Board of Trustees, stating that the Board of Trustees is directed by the Constitution to nominate some one for the treasurership, presented the name of Dr. Josiah J. Moore, Chicago, to succeed himself as Treasurer of the Association. The nomination was seconded by Dr. E. S. Hamilton, Illinois.

Dr. G. Henry Mundt, Illinois, moved that the nominations be closed. The motion was seconded by Dr. John Z. Brown, Utah, and carried.

Dr. G. Henry Mundt, Illinois, presented a substitute motion that the House confirm the nomination of the Board of Trustees for Treasurer. The motion was seconded by Dr. William A. Mulherin, Georgia, and carried, and the Speaker declared Dr. Moore elected to the office of Treasurer for the ensuing year.

Announcement of Bombing of Japan

The Secretary read the following message, which was received with applause:

The United Press has just received an announcement by the War Department that B-29 super fortresses of the United States Army Air Force 20th Bomber Command today bombed Japan. This is the first raid on Japan proper since the Doolittle raid in 1942.

Election of Speaker of House of Delegates

With Dr. R. W. Fouts, Vice Speaker, in the Chair, Dr. James Q. Graves, Louisiana, nominated Dr. H. H. Shoulders, Nashville, Tenn., to succeed himself as Speaker of the House. The nomination was seconded by Drs. William Weston, Section on Pediatrics; William A. Mulherin, Georgia; J. B. Lukins, Kentucky, and J. F. Hassig, Kansas, and others.

Dr. George W. Kosmak, New York, moved that the nominations be closed and the motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

Dr. George W. Kosmak moved that the Secretary be directed to cast the ballot of the House for Dr. Shoulders, and the motion was seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

The Secretary cast the ballot of the House for Dr. H. H. Shoulders, Nashville, Tenn., for Speaker of the House of Delegates of the American Medical Association for the ensuing year, and the Vice Speaker declared Dr. Shoulders so elected.

Dr. Shoulders resumed the Chair and addressed the House briefly.

Election of Vice Speaker of House of Delegates

The Speaker resumed the Chair and called for nominations for Vice Speaker of the House of Delegates.

Dr. Robert E. Schlueter, Missouri, nominated Dr. Roy W. Fouts of Omaha, Neb., to succeed himself and the nomination

was seconded by Drs. Mather Pfeiffenberger, Illinois, and James Q. Graves, Louisiana, and others.

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. George W. Kosmak, New York, and carried, the nominations were closed.

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, that the Secretary cast the ballot of the House for Dr. R. W. Fouts for Vice Speaker. The Secretary cast the ballot of the House for Dr. Roy W. Fouts, Omaha, to serve as Vice Speaker of the House of Delegates for the ensuing year and the Speaker declared Dr. Fouts duly elected.

Election of Trustees

Election of Trustee to Succeed Dr. Roger I. Lee

Dr. Edward R. Cunniffe, New York, nominated Dr. Louis H. Bauer, New York, for the office of Trustee of the American Medical Association to succeed Dr. Roger I. Lee, resigned. The nomination was seconded by Drs. George W. Kosmak and J. Stanley Kenney, New York; Holman Taylor, Texas; Harry V. Paryzek, Ohio; Walter G. Phippen, Massachusetts; Robert A. Peers, California; James R. Miller, Connecticut; Arthur R. McComas, Missouri; Lloyd Noland, Alabama, and Robert L. Anderson, Pennsylvania. On motion of Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, seconded by Dr. George W. Kosmak, New York, and carried, the nominations were closed.

On motion of Dr. J. Stanley Kenney, New York, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the Secretary cast the ballot for the election of Dr. Louis H. Bauer as Trustee for a term of five years and the Speaker declared Dr. Bauer so elected.

Address of Dr. Louis H. Bauer

The Chairman presented Dr. Bauer, who addressed the House as follows:

Mr. Speaker and Members of the House: I am somewhat at a loss to know what to say. Naturally I appreciate the honor. I hope that goes without saying. But I want you to know that I also realize that it carries with it a tremendous responsibility and an enormous amount of work. I had the privilege during the past year of sitting in on a few of the meetings of the Board of Trustees when matters pertaining to the Council on Medical Service and Public Relations were under consideration, and I could not help but be impressed with the infinite detail and the very careful consideration which they give to every question which comes before them. I am very proud to be associated for the next five years with a group of men of that caliber. I feel somewhat in a state of tremulation in taking over those duties. It makes me wonder whether I have the necessary qualifications. I know many members of this House who have served a good deal longer than I have and are better qualified for this honor. But if hard work and earnest loyalty to the ideals of American medicine mean anything, I can assure you of that. I just hope that you won't expect me to fill the shoes of Roger Lee. I don't know any one who can do that. But if when this term is over you can say that I have in some small degree approached his stature, then I shall feel well satisfied.

Election of Trustee to Succeed Dr. E. L. Henderson

Dr. J. B. Lukins, Kentucky, nominated Dr. E. L. Henderson, Louisville, Ky., to succeed himself as Trustee, and the nomination was seconded by Drs. Walter E. Vest, West Virginia; Louis A. Buie, Section on Gastro-Enterology and Proctology; F. S. Crockett, Indiana; Robert H. Hayes, Illinois; William Weston, Section on Pediatrics, and Thomas A. McGoldrick, New York.

Dr. Robert A. Peers, California, moved that the nominations be closed. The motion was seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried.

On motion of Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, seconded by Dr. William L. Mulherin, Georgia, and carried, the Secretary was instructed to cast the ballot of the House for Dr. E. L. Henderson, Louisville, Ky., to succeed himself as a member of the Board of Trustees.

The Secretary cast the ballot of the House for Dr. Elmer L. Henderson, Louisville, Ky., to succeed himself as a member of the Board of Trustees for a term of five years, and the Speaker declared Dr. E. L. Henderson so elected.

Address of Dr. E. L. Henderson

The Chairman requested Dr. J. B. Lukins, Kentucky, to conduct Dr. Henderson to the platform, after which Dr. Henderson addressed the House as follows:

Mr. Speaker, Members of the House of Delegates: I wish to thank you for the honor which you have bestowed on me and for your expression of continued confidence, and I wish to tell you that I will continue to serve you as I have for the past five years to the best of my ability.

Nominations for Standing Committees

Nominations by Dr. Herman L. Kretschmer, President

Member of the Judicial Council

Dr. Herman L. Kretschmer, President, nominated Dr. Edward R. Cunniffe, New York, to succeed himself as a member of the Judicial Council for a term of five years.

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, that the House confirm the nomination, and the motion was seconded by Drs. Thomas M. Brennan and Thomas A. McGoldrick, New York, and Andrew F. McBride, New Jersey, and carried, and the Speaker declared Dr. Cunniffe duly elected a member of the Judicial Council for a term of five years.

Member of the Council on Scientific Assembly

Dr. Kretschmer nominated Dr. Charles H. Phifer, Chicago, to succeed Dr. J. Gurney Taylor, Milwaukee, as a member of the Council on Scientific Assembly for a term of five years.

On motion of Dr. J. Morrison Hutcheson, Virginia, seconded by Dr. G. Henry Mundt, Illinois, and carried, the nomination was confirmed, and the Speaker declared Dr. Charles H. Phifer, Illinois, duly elected for membership on the Council on Scientific Assembly for a term of five years.

Address of Dr. Edward R. Cunniffe

Mr. Speaker, Members of the House: I wanted to tell you a story which I told in New York in a recent election. Winston Churchill, when he was attending public school in England, won a medal for excellence in one of the studies that he was doing at the time, and he wrote to his mother apprising her of the fact. She wrote back and said "I am very glad to hear of your success, Winston. I know you don't deserve it, but try to live up to it."

Address of Dr. Charles H. Phifer

Mr. Speaker, Mr. President, Members of the House of Delegates: I am most grateful to all of you for the honor you have conferred on me and I will do all that I can to fill the position to which I have been elected.

Nominations by the Board of Trustees

Member of Council on Medical Education and Hospitals to Succeed Dr. Charles Gordon Heyd

Dr. R. L. Sensenich for the Board of Trustees reminded the House of the section in the Constitution and By-Laws directing the Board of Trustees to submit nominations for a member of the Council on Medical Education and Hospitals and that it has been the practice to nominate two persons for that place on the Council as a vacancy occurs. The Board of Trustees therefore placed in nomination the name of Dr. Charles Gordon Heyd to succeed himself, and also the name of Dr. Fred M. Smith of Iowa City.

The Tellers spread the ballot and the Secretary announced that 149 Delegates had registered present, and that 130 votes were cast, of which Dr. C. Gordon Heyd received 83 and Dr. Fred Smith 47.

The Speaker declared Dr. Charles Gordon Heyd elected by the House to membership on the Council on Medical Education and Hospitals for a term of seven years.

THE COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

The Speaker stated that according to a rule of the House adopted by the House on Monday, a ballot had been prepared by the Board of Trustees. The Board of Trustees is charged with placing in nomination before the House for membership on the Council on Medical Service and Public Relations these names.

Dr. R. L. Sensenich for the Board of Trustees announced that there were difficulties in the manner of presentation because there were six places to fill, and the By-Laws specifically stated that the term of membership on the Council shall be three years, provided at the end of the first year there shall be an election of two members for one year, two for two years and two for three years and that the House will have to decide on how it will select the various terms of office. However, after the first year the Board of Trustees shall present to the House of Delegates for Election to membership to the Council a list of three nominations for each vacancy. It was further provided that these must be selected according to geographic distribution. The Board of Trustees gave considerable study as to how best to present this and therefore prepared for the House a ballot on which there were three nominations each for six places, and they were geographically arranged.

The names are (arranged alphabetically in each group) for group 1 Drs. Joseph Londrigan, Hoboken, N. J., Thomas A. McGoldrick, Brooklyn, and Walter G. Phippen, Salem, Mass.; group 2, Drs. John H. Fitzgibbon, Portland, Ore., William R. Molony, Los Angeles, and Raymond L. Zech, Seattle; group 3, Drs. William R. Brooksher, Fort Smith, Ark., Wingate M. Johnson, Winston-Salem, N. C., and W. S. Leathers, Nashville, Tenn.; group 4, Drs. A. W. Adson, Rochester, Minn., E. S. Hamilton, Kankakee, Ill., and Thomas F. Thornton, Waterloo, Iowa; group 5, Drs. Carl McCaskey, Indianapolis, E. J. McCormick, Toledo, Ohio, and Walter E. Vest, Huntington, W. Va., and group 6, Drs. John W. Amesse, Denver, Forrest L. Loveland, Topeka, Kan., and James R. McVay, Kansas City, Mo., one man in each group on the ballot to be voted for.

The Speaker reread the Report of the Reference Committee on Rules and Order of Business that the House had adopted on Monday, after which Dr. Holman Taylor, Texas, moved that the House cast its ballots in accordance with the grouping as set out by the Trustees. The motion was seconded by Dr. Thomas M. Brennan, New York, and carried.

The Speaker appointed as additional tellers Drs. James C. Sargent, Wisconsin, James M. Flynn, New York, and Stephen E. Gavin, Wisconsin.

Death of Dr. John T. Murphy

The Secretary made the following announcement:

Mr. Speaker, Members of the House: It is with great regret that I have to announce to the House that a gentleman who has served this Association very faithfully for many years, Dr. John T. Murphy, Secretary of the Section on Radiology, has died today. Dr. Murphy is known to many members of this House and to thousands of physicians throughout the United States and has rendered most devoted service for all these years as Secretary of our Section on Radiology.

Dr. William A. Mulherin, Georgia, moved that the tellers be requested to retire from the room and make a careful count of the ballot and bring back a report on it. The motion was seconded by Dr. Thomas A. Pitts, South Carolina, and carried.

Election of Affiliate and Associate Fellows

NOMINATIONS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

The Secretary presented the following nominations for Affiliate Fellowship, properly approved by the Council on Scientific Assembly, which, on motion of Dr. Thomas M. Brennan, New York, seconded by Dr. William A. Mulherin, Georgia, and carried, were confirmed.

Abel, William C., Columbia, S. C.
Ayer, Thomas H., Westboro, Mass.
Baker, Charles H., Chilhowie, Va.
Berge, F. E., Long Beach, Calif.
Brennemann, Joseph S., Reading, Vt. (nomination from Illinois State Medical Society)
Brown, John R., Hollywood, Calif.
Burkholder, J. F., Chicago.
Chipman, Ernest D., San Francisco.
Cole, Lewis G., White Plains, N. Y.
Commons, E. L., Los Angeles.
Cooke, W. L., Columbus, Ga.
Culbert, William L., New York.
Davis, George E., New York.
Dayton, Hughes, Irvington, N. Y.
Dutton, Mary L., San Francisco.
Edwards, Ralph T., Bigfork, Mont. (nomination from Minnesota)
Ellis, Frederick W., Newton Centre, Mass.
Flanders, Louis W., Dover, N. H.
Goldman, Alexander, New York.
Goodman, Charles, New York.
Gray, G. M., Kansas City, Kans.
Hackney, F. J., Centralia, Wash.
Hawkes, Charles E., Greenville, R. I.
Hicks, I. Clay, Huntington, W. Va.
Hill, Roland, St. Louis.
Kann, Ulysses S., New York.
Kingsbury, Jerome, New York.
Lamberton, R. F., Denver.
Ledbury, John Wm., Uxbridge, Mass.
Levins, Nathan N., Boston.
Lynch, Charles F., Springfield, Mass.
MacDonald, D. F., Taunton, Mass.
MacLachlan, Charles, New Rockford, N. D.
Manierre, John T., Chicago.
McPherson, George E., Amherst, Mass.
Messinger, M. P., Oakfield, N. Y.
Mueller, Anton D., Chicago.
Neff, Robert L., Joplin, Mo.
Oates, Charles E., North Little Rock, Ark.
Oliver, Ellwood, Pine Plains, N. Y.
Patterson, Robert Q., Little Rock, Ark.
Powers, Everett, Carthage, Mo.
Rowell, Hubert N., Berkeley, Calif.
Schall, John H., Brooklyn.
Seelig, M. G., St. Louis.
Shipp, Augustus C., Little Rock, Ark.
Skoog, A. L., Kansas City, Mo.
Slaughter, Emma Y., Lowell, Mass.
Smith, Edwin M., Sr., Chicago.
Smith, William H., Boston.
Sondern, Frederic E., New York.
Spain, Kate C., St. Louis.
Walker, Moses R., Berkeley, Calif. (nomination from Nevada)
Watkins, John G., Little Rock, Ark.
Weinberger, C. F., Chicago.

NOMINATIONS FOR ASSOCIATE FELLOWSHIP

The Secretary presented the following nominations for Associate Fellowship approved by the section indicated, which were confirmed on motion of Dr. John J. Masterson, New York, seconded by Dr. Thomas A. McGoldrick, New York, and carried.

SECTION ON PRACTICE OF MEDICINE

Wood, W. Barry, Jr., Clayton, Mo.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Ryan, Edward J., D.D.S., Evanston, Ill.

SECTION ON PEDIATRICS

Anderson, George King, Evanston, Ill.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

Ansbacher, Stefan, Dr.Sc., Richmond Hill 18, N. Y.
Ellis, Fred W., Ph.D., Chapel Hill, N. C.
Hart, E. Ross, Philadelphia
Herwick, Robert T., Washington, D. C.
Packchanian, Ardzroony, Galveston, Texas.
Way, Edward L., Washington, D.C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Halpert, Béla, Oklahoma City.
Lewis, Howard B., Ann Arbor, Mich.

SECTION ON NERVOUS AND MENTAL DISEASES

Moore, Thomas V., Brookland, D. C.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Rostenberg, Adolph, Jr., Washington, D. C.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

DeNosaquo, Norman, Chicago.
Kerlan, Irvin, Washington, D. C.

Place of 1947 Annual Session

The Speaker appointed as additional tellers, so that the House could go on with the selection of the Place of 1947 Annual Session, Drs. William Weston, Section on Pediatrics; William A. Mulherin, Georgia; Thomas A. Pitts, South Carolina, and H. B. Everett and E. G. Wood, Tennessee.

Dr. R. L. Sensenich of the Board of Trustees reported that it was the opinion of the Board that it would be well to remind the House at this time that the 1947 session, which is the session for which you will now receive invitations, marks the one hundredth anniversary of the history of the American Medical Association. The Board has for some time past had in preparation extensive plans for the proper celebration of this anniversary in the session to be held in 1947. It is to be hoped at least that by 1947 either the war will be over or conditions will have so changed that it may be possible to entertain distinguished men from all over the world, men distinguished in scientific investigation, in education, in the practice of medicine and in all of those things which will be

of interest to us. In other words, in order that that session may be properly accommodated, it seemed important that the House give consideration to the needs of such meeting and that the city selected to entertain that particular meeting in 1947 should have sufficient available facilities for the housing properly of the Scientific Assembly and the presentation of addresses by these distinguished guests, but also it would be wisely known in advance that there would be sufficient housing accommodations at that meeting to celebrate properly the anniversary of the American Medical Association.

There have been invitations received, one from St. Louis and one from Atlantic City. I believe that the gentlemen representing those cities will present their invitations.

Dr. Robert E. Schlueter, Missouri, presented the advantages of St. Louis as a meeting place and extended an invitation to the Association to meet there in 1947.

Dr. Andrew F. McBride, New Jersey, cited the advantages of Atlantic City and invited the Association to meet in Atlantic City, N. J.

On request of the Speaker the Tellers spread the ballot.

To a request for the information the Secretary stated that the 1945 session will be held in New York City, and the 1946 session in the city of San Francisco.

The Speaker declared the ballot closed and requested the Tellers to proceed with the count.

The Secretary announced that 111 votes had been cast, of which Atlantic City received 80 and St. Louis 31.

On motion of Dr. Robert E. Schlueter, Missouri, duly seconded and carried, the selection of Atlantic City as the 1947 place of annual session was made unanimous, and the Chairman declared that Atlantic City had been selected as the place of session in 1947.

Address of Dr. Benvenuto R. Dino

The Chairman called on Dr. Benvenuto R. Dino, personal physician to the president of the Philippines, who addressed the House as follows:

Mr. Speaker, Members of the House: I wish to express my grateful appreciation for this distinct privilege to address you again this afternoon. I recall with pleasure that two years ago in Atlantic City I spoke to you and expressed the gratitude and the loyalty of the Filipino people to the government and people of America. Two years have passed and many developments have taken place, and, at this time, at your closing session of the House of Delegates it is significant to me that you remember the Philippines, because as you do you also remember freedom.

My friends, I wish to inform you that the Filipinos today are all over the battlefronts of the world. Thousands of them are in the armed forces, in the Army, the Navy and the Coast Guard, in the Merchant Marine; thousands are in agriculture, especially in California and in the Pacific Northwest; many thousands are in essential jobs and industries. And back home the battle of the Philippines is still on in the hills of Luzon, in the Visayan Islands of Panay, in Cebu, Negros and Mindanao. These facts have been transmitted by official Japanese broadcasts. These are things for you and for all of us to think about. In spite of the cruelties and the sufferings of this war, sometimes I am thankful because we, the Filipinos, are given another chance to prove to the government and the people of the United States our loyalty and our gratitude.

Election of Members of the Council on Medical Service and Public Relations

Dr. Henry S. Ruth, Section on Anesthesiology, reported for the Chairman of Tellers on nominations by the Board of Trustees for members on the Council on Medical Service and Public Relations the following result.

	Votes		Votes
Dr. Londrigan	11	Dr. Adson	74
Dr. McGoldrick	96	Dr. Hamilton	55
Dr. Phippen	29	Dr. Thornton	4
Dr. Fitzgibbon	102	Dr. McCaskey	12
Dr. Molony	21	Dr. McCormick	84
Dr. Zech	10	Dr. Vest	37
Dr. Brooksher	42	Dr. Amesse	21
Dr. Johnson	20	Dr. Loveland	12
Dr. Leathers	70	Dr. McVay	99

The Chairman announced the election of Dr. Thomas A. McGoldrick, New York, having received 96 votes, as the member selected in group 1; the election of Dr. John H. Fitzgibbon, having received 102 votes, as the member selected in the second group; the election of Dr. W. S. Leathers, having received 70 votes, as the member selected in group 3; the election of Dr. A. W. Adson, having received 74 votes, as the member selected in group 4; the election of Dr. E. J. McCormick, having received 84 votes, as the member selected in group 5, and the election of Dr. James R. McVay, having received 99 votes, as the member selected in group 6.

As to terms, under the rules adopted by the House, the two receiving the highest number of votes are elected each for a three year term, namely Drs. John H. Fitzgibbon, Oregon, having received 102 votes, and James R. McVay, Missouri, having received 99 votes; the two receiving the next highest number of votes, each for a two year term, namely Drs. Thomas A. McGoldrick, New York, having received 96 votes, and E. J. McCormick, Ohio, having received 84 votes, and the two receiving the next highest number of votes, each for a one year term, namely Drs. A. W. Adson, Minnesota, having received 74, and W. S. Leathers, Tennessee, having received 70 votes. The Chairman declared those gentlemen elected to these respective terms.

On motion of Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, duly seconded and carried, the House adjourned sine die at 2:55 p. m.

REGISTRATION AT CHICAGO

The total registration at Chicago was 7,284. Below are summaries of the registration by sections and by states.

Registration by Sections

Practice of Medicine	2,062
Surgery, General and Abdominal	1,223
Obstetrics and Gynecology	393
Ophthalmology	289
Laryngology, Otology and Rhinology	183
Pediatrics	334
Experimental Medicine and Therapeutics	94
Pathology and Physiology	242
Nervous and Mental Diseases	187
Dermatology and Syphilology	283
Preventive and Industrial Medicine and Public Health	209
Urology	184
Orthopedic Surgery	134
Gastro-Enterology and Proctology	260
Radiology	219
Anesthesiology	110
Miscellaneous Topics: Sessions for the General Practitioner	376
Two or More Sections or No Section Marked	502
Total	7,284

Registration by States

Alabama	58	Nevada	...
Arizona	18	New Hampshire	11
Arkansas	41	New Jersey	85
California	202	New Mexico	13
Colorado	93	New York	434
Connecticut	45	North Carolina	56
Delaware	6	North Dakota	13
District of Columbia	124	Ohio	497
Florida	65	Oklahoma	68
Georgia	64	Oregon	33
Idaho	9	Pennsylvania	308
Illinois	1,981	Rhode Island	15
Indiana	328	South Carolina	37
Iowa	203	South Dakota	31
Kansas	82	Tennessee	95
Kentucky	87	Texas	169
Louisiana	85	Utah	33
Maine	6	Vermont	5
Maryland	98	Virginia	66
Massachusetts	123	Washington	62
Michigan	396	West Virginia	63
Minnesota	196	Wisconsin	371
Mississippi	46	Wyoming	7
Missouri	212	Canada and Misc. Foreign	133
Montana	11		
Nebraska	100		7,284

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Chicago session was characterized by the emphasis put on war medicine. The United States Army, the United States Army Air Forces and the United States Navy presented noteworthy exhibits of their own and lent generous aid in men and materials to other features of the meeting.

The Scientific Exhibit was reduced to about half its usual size because of the limitation of space in the Palmer House, and it was necessary to move the Motion Picture Program to the Morrison Hotel. The caliber of the exhibits which were shown was very high, and great credit is due to the exhibitors who, under the difficulties of wartime, were able to assemble such excellent material.

There were four Special Exhibits subsidized by the Board of Trustees.

The Special Exhibit on Fractures, under the auspices of a committee composed of Dr. Kellogg Speed, Chicago, chairman, Dr. Frank D. Dickson, Kansas City, Mo., and Dr. Walter Estell Lee, Philadelphia, was presented again this year. The United States Army cooperated in supplying materials, as well as soldiers who served as patients in the exhibit, and a group of thirty physicians and two nurses participated throughout the week in the demonstrations. A pamphlet describing the exhibit was distributed.

The Special Exhibit on the Treatment of Burns was organized by a committee consisting of Dr. Stanley J. Seeger, Texarkana, Texas, chairman, Capt. Ernest W. Brown (MC), U. S. Navy, and Capt. Joseph E. Hamilton, M. C., A. U. S. The exhibit covered the following subjects under the direction of the physicians indicated:

1. Treatment of War Burns, Capt. Joseph E. Hamilton, M. C., A. U. S.
2. Local Treatment of Burns, Dr. Roy D. McClure, Henry Ford Hospital, Detroit.
3. Treatment of Burns: General Care of the Burned Patient, Dr. Henry N. Harkins, Johns Hopkins University School of Medicine, Baltimore.
4. Establishment of a Skin Cover Following a Thermal Burn, Dr. Earl C. Padgett, University of Kansas School of Medicine, Kansas City, Mo.
5. Chemical Burns of the Eyes, Dr. Alan C. Woods, Johns Hopkins Hospital, Baltimore.
6. Electric Burns, Dr. Hart Ellis Fisher, Chicago.
7. Prevention of Burns in the Navy, Capt. Ernest W. Brown (MC), U. S. Navy (retired).

In addition, a group of physicians assisted in the demonstrations throughout the week, and pamphlets covering all phases of the treatment of burns were distributed.

The Special Exhibit on Chemotherapy and Infectious Diseases was presented under the auspices of a committee composed of Dr. Chester S. Keefer, Boston, chairman, Dr. Henry E. Meleney, New York, and Dr. Austin E. Smith, Chicago. Emphasis was placed on tropical diseases, and a group of physicians who had special experience in foreign countries with these diseases was present throughout the week to demonstrate the exhibit. A pamphlet describing the exhibit was distributed.

The Special Exhibit on Rehabilitation was presented by the Council on Industrial Health and the Council on Physical Therapy of the American Medical Association in cooperation with representatives of the Army, Navy, Veterans Administration and Federal Security Agency. The exhibit emphasized the current importance of rehabilitation and reemployment and covered the following subjects under the direction of the physicians indicated:

1. Fractures, Dr. Kellogg Speed, Chicago.
2. Amputations, Capt. Henry H. Kessler (MC), U. S. N. R.
3. Lame Backs, Dr. Frank R. Ober, Boston.
4. Hard of Hearing, Dr. William E. Grove, Milwaukee.
5. Tuberculosis, Dr. Leroy U. Gardner, Saranac Lake, N. Y., and Mr. Holland Hudson, New York.
6. Heart Disease, Dr. William D. Stroud, Philadelphia, and Dr. Rufus B. Crain, Rochester, N. Y.
7. Psychiatry, Dr. George S. Stevenson, New York.
8. Community Relations, Dr. Harold A. Vonachen, Peoria, Ill.
9. Reemployment, Dr. Max R. Burnell, Flint, Mich.

Special demonstrators were in attendance during the week.

A group of exhibits on Tropical Medicine attracted much attention and received special commendation from the Committee on Awards.

The Section on Practice of Medicine presented nine exhibits, one of which received an award. Dr. Thomas C. Garrett, Philadelphia, was the section representative.

The Section on Surgery, General and Abdominal, presented ten exhibits, two of which received awards, including a Silver Medal. The section representative was Col. Grover C. Penberthy, M. C., A. U. S.

The Section on Obstetrics and Gynecology had eight exhibits, one of which received an award. Dr. Frederick H. Falls, Chicago, was the section representative.

The Section on Ophthalmology had two exhibits, one of which received an award. The committee representing the section was composed of Dr. Georgiana D. Theobald, Oak Park, Ill., chairman, Lieut. Col. Derrick Vail, M. C., A. U. S., and Dr. A. B. Reese, New York.

The Section on Laryngology, Otology and Rhinology presented seven exhibits, one of which received an award. The section representative was Dr. Paul H. Holinger, Chicago.

The Section on Pediatrics had four exhibits. Dr. Sterling H. Ashmun, Dayton, Ohio, was the section representative.

The Section on Experimental Medicine and Therapeutics presented nine exhibits, three of which received awards, including a Gold and a Silver Medal. The section representative was Dr. Robert W. Wilkins, Boston.

The Section on Pathology and Physiology presented ten exhibits, three of which received awards, including a Gold Medal. The section representative was Dr. Frank W. Konzelmann, Philadelphia.

The Section on Nervous and Mental Diseases had five exhibits, one of which received an award. Dr. F. P. Moersch, Rochester, Minn., was the section representative.

The Section on Dermatology and Syphilology presented six exhibits, one of which received an award. Dr. Hamilton Montgomery, Rochester, Minn., was the section representative.

The Section on Preventive and Industrial Medicine and Public Health had ten exhibits, one of which received an award. Dr. Paul A. Davis, Akron, Ohio, was the section representative.

The Section on Urology had three exhibits. Dr. John H. Morrissey, New York, was the section representative.

The Section on Orthopedic Surgery showed four exhibits, two of which received awards. Dr. Fremont A. Chandler, Chicago, was the section representative.

The Section on Gastro-Enterology and Proctology presented three exhibits, one of which received a Bronze Medal. Dr. Grant H. Laing, Chicago, was the section representative.

The Section on Radiology had two exhibits, one of which received a Bronze Medal. The section representative was Dr. S. W. Donaldson, Ann Arbor, Mich.

The Section on Anesthesiology had six exhibits, two of which received awards. The section representative was Dr. E. A. Rovenstine, New York.

Other features of the Chicago session included the question and answer conferences on Rheumatic Fever presented by the Section on Pediatrics in cooperation with the Rheumatic Fever Committee of the American Academy of Pediatrics, and on Heart and Peripheral Vascular Disease presented by the Section on Practice of Medicine in cooperation with the American Heart Association.

Fifty motion picture films were shown on a regular schedule in the Casino at the Morrison Hotel. Most of the films were shown twice during the week.

Twenty-three papers which were read before the sections of the Scientific Assembly were correlated with the exhibits in the Scientific Exhibit.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

GROUP I

(Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.)

The GOLD MEDAL to William H. Feldman, H. Corwin Hinshaw and Frank C. Mann, Mayo Foundation, Rochester, Minn., for the exhibit on Chemotherapy of Tuberculosis.

The SILVER MEDAL to Robert H. Williams, Harvard Medical School and Boston City Hospital, Boston, for the exhibit on Thiouracil in Thyrotoxicosis.

The BRONZE MEDAL to J. A. Roth, A. C. Ivy and A. J. Atkinson, Northwestern University Medical School, Chicago, for the exhibit on Effect of Caffeine on the Stomach.

CERTIFICATES OF MERIT, Group I, are awarded to the following (alphabetically arranged):

Paul N. Harris and K. K. Chen, the Lilly Research Laboratories, Indianapolis, for exhibit on Experimental Liver Injury.

George N. Papanicolaou, Herbert F. Traut and Andrew A. Marchetti, Cornell University Medical College, New York, and Joe V. Meigs, Maurice Fremont-Smith, Ruth M. Graham, Israel Kapnick and Lois T. Janzen, Harvard Medical School, Massachusetts General Hospital, Boston, for the exhibit on the Vaginal Smear in the Diagnosis of Cancer.

R. H. Rigdon, University of Arkansas School of Medicine, Little Rock, for the exhibit on Pathologic Lesions Occurring in Human and Experimental Malaria.

H. S. Van Ordstrand and Robert Hughes, Cleveland Clinic, Cleveland; J. M. deNardi, Lorain, Ohio, and Morris G. Carmody, Painesville, Ohio, for the exhibit on Industrial Diseases in the Beryllium Industry.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of H. J. Corper, National Jewish Hospital, Denver, on the Transdermal Tuberculin Test.

That of A. C. Hilding, Duluth, Minn., on the Production of Negative Pressure in Respiratory Tract by Ciliary Action—Probable Relation to Postoperative Atelectasis.

That of Mildred Trotter, Virginia S. Lanier, Gordon S. Letterman and Howard E. McKnight, Department of Anatomy, Washington University School of Medicine, St. Louis, on Continuous Caudal Analgesia; Pertinent Anatomic Features.

That of Charles S. White, Jacob J. Weinstein and J. Lloyd Collins, George Washington Medical School and Gallinger Hospital, Washington, D. C., on Protein Metabolism and the Use of Protein Digest in Surgery; Preparation of Plasma by Sedimentation by a New Method.

GROUP II

(Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation and correlation of facts.)

The GOLD MEDAL to Armand J. Quick, Marquette University School of Medicine, Milwaukee, for the exhibit on Determination of Prothrombin.

The SILVER MEDAL to Keith S. Grimson, Duke University, Durham, N. C., for the exhibit on Paravertebral Sympathectomy for Hypertension.

The BRONZE MEDAL to Leo G. Rigler, University of Minnesota, Minneapolis, Henry S. Kaplan, Lieutenant, M. C., A. U. S., and Daniel L. Fink, Captain, M. C., A. U. S., for the exhibit on Pernicious Anemia, Benign Polyps and Carcinoma of the Stomach.

CERTIFICATES OF MERIT, Group II, are awarded to the following (alphabetically arranged):

Urban H. Eversole, Leo V. Hand and Morris J. Nicholson, the Lahey Clinic, Boston, for the exhibit on Spinal Anesthesia.

Harry Gold and McKeen Cattell, Cornell University Medical College, New York, for the exhibit on Recent Developments in Digitalis.

J. Q. Griffith Jr. and Wilfred E. Fry, University of Pennsylvania, Philadelphia, for the exhibit on Papilledema; Mechanism and Clinical Applications.

J. E. M. Thomson, University of Nebraska, Lincoln, for the exhibit on Local Shock—A Vasomotor Phenomenon Occurring in Certain Severe Injuries of the Extremities.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of C. W. Emmons, National Institute of Health, United States Public Health Service, Bethesda, Md., on Fungi of Dermatologic Importance.

That of John J. Fahey, Chicago, on the Circulation of the Femoral Head.

That of E. S. Gurdjian and John E. Webster, Major, M. C., A. U. S., Wayne University College of Medicine and Grace Hospital, Detroit, on Traumatic Intracranial Hemorrhage.

That of Kurt Lange and Linn J. Boyd, New York Medical College, New York, on the Use of Fluorescein to Determine the Adequacy of Circulation.

CERTIFICATE OF APPRECIATION

A Certificate of Appreciation is awarded to J. Ramos e Silva, Escola de Medicina e Cirurgia, Rio de Janeiro, Brazil, for his contribution on Brazilian Dermatoses.

SPECIAL COMMENDATION

Special commendation is given to the group of exhibits on tropical medicine, as well as to the question and answer conferences on rheumatic fever and heart and peripheral vascular diseases.

The Committee on Awards wishes to offer appreciation and commendation to the United States Army, the United States Army Air Forces and the United States Navy for their excellent exhibits and for their cooperation in the over-all success of the Scientific Exhibit at the 1944 Session.

SUBSIDIZED EXHIBITS

The Committee on Awards commends highly the Special Exhibits on Fractures, the Treatment of Burns, Chemotherapy and Infectious Diseases, and Rehabilitation which are sponsored by the Board of Trustees of the American Medical Association.

COMMENTS

The Committee regrets its inability to have included in the awards a consideration of the motion pictures which are being shown this year in the Casino at the Morrison Hotel. Because of unusual space and time considerations, many pictures could not be exhibited prior to the final meeting of the Committee on Awards.

The representatives to the Scientific Exhibit from the sixteen sections have rendered invaluable service to the Committee on Scientific Exhibit and to the Director of the Scientific Exhibit in encouraging the presentation of exhibit material of special interest and merit. Only the limitation in the number of awards available prevented official recognition of a large number of exhibits of undoubted merit.

Finally, the Committee on Awards desires to compliment the Director of the Scientific Exhibit of the American Medical Association, Dr. Thomas G. Hull, for having dealt in a splendid fashion with the many difficulties encountered in arranging the Scientific Exhibit under the most trying conditions of wartime.

VINCENT W. ARCHER, University, Va., Chairman.
DANIEL S. CUNNING, New York.
THOMAS G. ORR, Kansas City, Kan.
JOHN W. SCOTT, Lexington, Ky.
RALPH M. WATERS, Madison, Wis.

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—H. Res. 592 has been agreed to by the House of Representatives, directing the House Committee on Education to make a study of the effect on the colleges and universities in the United States of (1) reduction in enrolment and in faculties as a result of service by students and faculty members in the armed forces or in other war activities and (2) recent curtailment and prospective further curtailment of Army and Navy training programs in such colleges and universities. This committee will be authorized to formulate such legislation as it deems appropriate for presentation to the House. H. R. 1506 has passed the House and Senate, a bill to amend the Pay Readjustment Act of 1942. Among other amendments, this legislation will permit service in the Medical Reserve Corps to be counted for pay purposes. H. R. 4615 passed the House, a bill to establish, for the investigation and control of tuberculosis, a division in the United States Public Health Service. In the Senate, this bill was included as an amendment to H. R. 4624, the bill consolidating and revising the laws relating to the United States Public Health Service, and was enacted by the Senate in that form. H. R. 4624 has passed the Senate with amendments, and those amendments have been agreed to by the House, a bill consolidating and revising the laws relating to the United States Public Health Service. H. R. 4881 has passed the House and Senate, amending the federal narcotic laws to include Isonipecaine. H. R. 4899 has been agreed to by the conferees, providing appropriations for the Department of Labor, the Federal Security Agency and related independent agencies for the fiscal year ending June 30, 1945. As agreed to in conference, this bill appropriates $42,800,000 for a continuation of the E. M. I. C. program, extends the benefit of the program to Army aviation cadets and provides that 2.5 per cent of the amounts allotted to the states may be used for administrative purposes. H. R. 4967 has passed the House and Senate and the conference report has been agreed to, making appropriations for the military establishment for the fiscal year ending June 30, 1945. This bill provides, among other things, that no appropriation contained in it shall be available for any expense incident to educating persons in medicine, including veterinary, or dentistry, if any expense on account of their education in such subjects was not being defrayed out of appropriations for the Military Establishment for the fiscal year 1944 prior to June 7, 1944. The foregoing proscription is subject to an exception that nothing in it "shall interfere with compliance with the provisions of law authorizing the detail of officers and enlisted men of any component of the Army of the United States as students, observers and investigators as contemplated by section 127 (a) of the National Defense Act, approved June 3, 1916, as amended."

Bills Introduced.—H. R. 5079, introduced by Representative Dondero, Michigan, provides for vocational training and retraining programs for the occupational adjustment and readjustment of veterans returning from military service, war workers demobilized from war production plants, and for other youth and for adults. H. R. 5103, introduced by Representative Rogers, Massachusetts, provides for the establishment of a permanent Nurse Corps in the Veterans' Administration. H. R. 5128, introduced by Representative Miller, Missouri, proposes the deferment in each calendar year under the Selective Training and Service Act of not less than 6,000 medical students and not less than 4,000 dental students.

DISTRICT OF COLUMBIA

Changes in Status.—H. R. 3150 has passed the House, proposing to amend the healing arts practice act of the District of Columbia so as to modify the requirement that an applicant applying for a license to practice must have practiced in another jurisdiction for not less than two years. As a substitute for this requirement, the bill would provide (1) that the applicant must have practiced in another jurisdiction for not less than one continuous year out of three years immediately preceding the date of his application and (2) that that one year's continuous practice may be either private, institutional or governmental, or a combination thereof. H. R. 4867 has passed the House, extending the health regulations of the District of Columbia relating to restaurants to such establishments operated by the government.

Bill Introduced.—H. R. 5065, introduced, by request, by Representative Randolph, West Virginia, proposes to require examination and laboratory tests for syphilis, gonorrhea and tuberculosis of all applicants for marriage licenses before the issuance thereof in the District of Columbia.

WOMAN'S AUXILIARY

Florida

The Florida auxiliary held its state convention April 13-14 at St. Petersburg, with Mrs. F. W. Krueger, president, presiding.

Georgia

Mrs. W. T. Randolph, president-elect of the Georgia auxiliary, has written the following message to members: "A call is being made on all doctor's wives to enlist in auxiliary work for the duration. Every community looks to the doctor's wife to be an authority on subjects concerning health and education. She is obligated to speak authoritatively, and there is no better source of information than the medical auxiliary, since its object, as set forth in the constitution, is 'to extend the aims of the medical profession to all organizations which look to the advancement of health and education; to assist in the entertainment of all state, district, county and other medical meetings; to promote acquaintanceship among physicians' families that fellowship may increase.' Every physician's wife owes it to herself and to her husband to become affiliated with the auxiliary to the medical society in some way."

Illinois

The annual convention of the Illinois auxiliary was held at the Palmer House, Chicago, May 16-17. Mrs. Frederick Tice, Oak Park, was convention chairman.

Iowa

At a recent meeting of the Iowa auxiliary, Mrs. Jay C. Decker of Sioux City was installed as president and Mrs. Soren S. Westly of Manly was chosen president-elect. Mrs. William S. Reilly of Red Oak is the retiring president.

The Sioux City auxiliary had a tea recently at which election of officers took place. Many projects were discussed and plans made to cooperate with the Woodbury County Medical Society in its activities concerning the Wagner-Murray-Dingell bill.

Kansas

Mrs. Leo J. Schaeffer has been elected president of the Kansas auxiliary and has chosen the national program of "Health and Postwar Planning" as the state's slogan for 1944-1945.

Mississippi

The Mississippi auxiliary held its state convention May 9-10. Mrs. Eben J. Carey, national president, was the guest speaker at the annual luncheon. Mrs. J. L. Clark is the new president.

North Carolina

The North Carolina Auxiliary held its twenty-second annual convention at Pinehurst May 1-3. A novel feature was the presentation of door prizes at the meeting of a war bond and many "warsages." Mrs. L. T. Pace of Greenville was the president.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

District Meetings.—At a meeting of the Ninth Councilor District Medical Society in Harrison, June 7, the speakers included Dr. Merlin J. Kilbury, Little Rock, on "Interpretation of Laboratory Findings"; Dr. Wesley J. Ketz, Batesville, "Treatment of Urinary Infections," and Dr. Ruth E. Lesh, Fayetteville, "Torsion of Ovarian Cysts in Children." Dr. Joseph F. Shuffield, Little Rock, president of the state medical society, also spoke.——The Fifth Councilor District Medical Society was addressed on May 16 in Magnolia by Drs. Joe D. Nichols, Atlanta, Texas, on "Intravenous Anesthesia" and Wiley R. Buffington, New Orleans, "Certain Ocular Manifestations Resulting from Systemic Diseases."

CALIFORNIA

Osteopath Sentenced for Abortion.—Clyde A. Pierson, D.O., San Bernardino osteopath, was recently sentenced by Judge Charles L. Allison to serve two to five years in San Quentin, after his motion for a new trial on three counts of abortion had been denied. Through counsel, Pierson served notice of appeal, and a stay of execution was granted pending its hearing. Judge Allison increased bail from $2,500 to $10,000, and the osteopath promptly posted the amount in cash.

Illegal for Barber to Administer Eye Drops.—In an opinion on May 23 Attorney General Robert W. Kenny ruled that it is illegal for a barber to administer eye tonic drops, it is reported. Treatment of the eyes, the opinion said, either with medicine or with surgery, is limited to physicians and surgeons. The opinion was to C. E. Rynearson, secretary of the state board of barber examiners. The ruling said "Many eye tonics are drugs, under California law, and the barber administering them may be guilty of practicing medicine without a license. The use of any product classified as a drug by those not qualified to administer it could, in certain instances, lead to dangerous results. Barber shops may pass along a dangerous infection."

Incidence of Meningitis in San Francisco.—That the incidence of epidemic meningitis is increasing in San Francisco is evidenced by a report of Dr. Jacob C. Geiger, director of public health, San Francisco, appearing in *California's Health*, April 29. In 1942 a total of 33 cases with 10 deaths was reported. In 1943 a total of 153 cases, the highest number ever to be reported in one year in San Francisco, was recorded, with case reporting reaching a peak in March 1943 with 28 cases, more than had been previously recorded in a single month. The first twelve weeks of 1944, 64 cases were recorded, or 42 per cent of the annual total for 1943. For the first three months of 1944 the disease increased more than 52 per cent in the state as a whole as compared with the first three months of 1943; 423 cases in civilians were reported in the state during this period of 1944 as compared with 277 during the corresponding period of 1943. The total number of civilian cases recorded in the state was 207 in 1942, 927 in 1943 and 423 during the first quarter of 1944.

DELAWARE

Society News.—Dr. William H. Perkins, dean and professor of preventive medicine, Jefferson Medical College of Philadelphia, discussed "Tropical Diseases of Concern to the Home Front" before the New Castle County Medical Society and the Delaware Academy of Medicine, Wilmington, May 16. Dr. Henry J. Tumen, Philadelphia, addressed the society April 18 on "Acute Infectious Hepatitis."

DISTRICT OF COLUMBIA

Personal.—Dr. Robert Lomax Wells was recently named medical director of the Chesapeake and Potomac Telephone Company to succeed Dr. William Cabell Moore, who had held the office since March 1922. The latter will continue in private practice.

Dr. Ramsey Resigns as Head of the Department of Obstetrics.—Dr. Herbert P. Ramsey has resigned as executive officer of the department of obstetrics at George Washington University School of Medicine but will remain on the faculty as clinical professor of obstetrics and gynecology, according to *Medical Annals*. Dr. Radford Brown, professor of obstetrics and gynecology, will be acting executive officer until August 31.

ILLINOIS

Dearholt Medal Awarded to Dr. Bosworth.—Dr. Robinson Bosworth, medical director of Pleasant View Sanatorium, East St. Louis, was given the Dearholt Medal during the annual meeting of the Mississippi Valley Conference on Tuberculosis at its meeting in Chicago, May 10. The citation accompanying the award emphasized Dr. Bosworth's contribution to the development of sanatoriums for tuberculous patients and as "a pioneer in the development of standards for outpatient work." The medal is awarded annually for "a marked special service to tuberculosis control in the conference area." Dr. Bosworth is a former president of the Mississippi Valley Conference on Tuberculosis.

Chicago

Aleck Bauer Dies.—Aleck Bauer, founder of Bauer & Black, division of the Kendall Company, died June 11, aged 81.

Mac Cahal Returns to Chicago.—Mr. Mac F. Cahal, who resigned as executive secretary of the American College of Radiology to accept a similar position with the Southwestern Medical Foundation, Dallas, has resigned the latter position to return to his post with the American College of Radiology. Mr. Cahal will resume his former activities about August 1.

Special Society Elections.—At the meeting of the Chicago Society of Internal Medicine, May 22, Dr. Lee C. Gatewood was named president and Dr. George E. Wakerlin vice president. Dr. Howard L. Alt was reelected secretary-treasurer.——Dr. James E. Fitzgerald was chosen president-elect of the Chicago Gynecological Society at its annual meeting, May 19, and Dr. William J. Dieckmann was installed as president. Other officers include Drs. Ralph A. Reis, vice president, Henry Buxbaum, treasurer, and Herbert E. Schmitz, secretary.——Dr. Theophil P. Grauer was chosen president of the Chicago Urological Society at its meeting, May 25, Dr. James W. Merricks vice president, and Dr. Russell D. Herrold was reelected secretary-treasurer.

MICHIGAN

New Building for Penicillin Laboratory.—Plans are under way to build a $15,000 penicillin laboratory in Lansing. It is the hope of the Michigan Department of Health eventually to add penicillin to the list of products distributed free to the physicians of the state.

Dr. Vanderslice Joins Mott Foundation.—Dr. David A. Vanderslice has resigned as director of the school health service of the Ann Arbor Public Schools to become medical consultant to the Flint Public Schools and director of the Charles Stewart Mott Foundation health center. The new appointment was effective July 1.

University News.—Approval has been given to a contract between the federal Office of Scientific Research and Development and Wayne University College of Medicine, Detroit, to conduct a study on the influence of oral administration of sodium lactate solution. The government will provide $7,500 to cover the cost of the project, which will be carried out under the direction of Dr. John W. Hirshfeld, assistant professor of surgery at the college of medicine.

Wayne University Initiates Sigma Xi Members.—At the first annual initiation of the Wayne University Chapter of the Society of Sigma Xi, May 26, Dr. Milton H. Erickson, director of psychiatric research and training, Eloise Hospital and Infirmary, discussed "Psychiatry as a Wartime Science." William H. Pyle, president of the chapter, was toastmaster at the banquet. New initiates in the society included Drs. William L. Brosius, Sylvester E. Gould, Gordon B. Myers, Paul H. Noth, Thomas L. Patterson, Ph.D., and Dr. Erickson.

Society Serves Families of Servicemen.—Families of servicemen who are unable to obtain the services of their regular family physician may call the Medical Information Center of the Wayne County Medical Society under a new plan recently adopted by the society. The service includes the making available of names of members of the society in the neighborhood of the inquirer and the provision of service to the family at either a minimum or a no cost basis. More than 100 members of the society have registered to take emergency calls day and night, while an additional 600 have offered free aid to servicemen's families. Physicians will be available within a 3 mile radius of every Wayne County family. A map at the Medical Information Center will be pinmarked for doctors' homes and offices, from which the attendant will select the convenient physician for any call.

MINNESOTA

Personal.—Dr. Sidney A. Slater, Worthington, was presented with a gold wrist watch at a recent meeting of the Minnesota Public Health Association in recognition of his six years of service as president of the association.

Hospital News.—Heron Lake Hospital Association is the name of the newly incorporated hospital administration taking over the former Southwestern Minnesota Hospital at Heron Lake. The board of trustees is headed by Dr. Alfred G. Chadbourn.

Dr. Hill Succeeds Dr. Harrington.—Dr. Frank J. Hill, Bismarck, since November 1940 health officer of North Dakota, has been appointed health commissioner of Minneapolis to succeed Dr. Francis E. Harrington, who will retire on June 19 (THE JOURNAL, Dec. 11, 1943, p. 980).

Osteopath Ends Life While on Trial for Manslaughter.—James O. Humbert, Minneapolis, a licensed osteopath, was found dead in a hotel room, May 7, with an artery slashed in his left wrist. The coroner of Hennepin County, Dr. Russell R. Heim, Minneapolis, recorded the death as a suicide. Humbert was on trial in the district court of Hennepin County on an indictment charging him with the crime of manslaughter in the first degree. According to the Minnesota State Board of Medical Examiners, Humbert was indicted on a charge of performing an abortion.

NEBRASKA

Rheumatic Disease Program.—The state division of crippled children's services has opened a program for the care of children with rheumatic fever in Douglas and Sarpy counties. Children from these counties who are under 21 years of age and are suffering from or suspected to be suffering from rheumatic fever may be referred for diagnosis and consultation service. If they are found to be in need of care and their parents are unable to provide such care they will be accepted for treatment. Diagnostic clinics will be held at the University of Nebraska Hospital. Cooperating agencies concerned in the program are the University of Nebraska Hospital and Dispensary, Omaha Visiting Nurse Association, state department of health nurses assigned to Sarpy county, Nebraska Society for Crippled Children, and the Douglas County Assistance Department. It is hoped that the program will serve as a demonstration of the need of and possibilities for the care of children with or suspected of having rheumatic fever.

NEW YORK

Changes in Health Officers.—Dr. Henry C. Lapp has resigned as health officer of North Tonawanda, a position he had held for twenty-two years; he had been a member of the board of health for twenty-five years. Dr. Edward M. Bangasser, Buffalo, has been appointed health officer of Lancaster to succeed Dr. Clarence B. Mackey, who is ending twenty-three years in the position. Dr. James C. Boland, Binghamton, has been appointed health officer of Troy.

Graduate Lectures.—"Penicillin Therapy" was the title of a graduate lecture presented recently under the auspices of the state medical society and the state department of health. Dr. James E. McCormack, New York, gave the lecture before the Broome County Medical Society, Binghamton, May 16, Richard C. Arnold, Surgeon, U. S. Public Health Service, before the Medical Society of the County of Warren, Glens Falls, June 15. Dr. Frederick N. Marty, Syracuse, delivered the lecture before the Medical Society of the County of St. Lawrence, Potsdam, June 22. Dr. McCormack also addressed the Westchester County Medical Society, White Plains, June 20, and Dr. William J. Orr, Buffalo, the Cattaraugus County Medical Society in Allegany, June 22.

New York City

Hospital News.—The Herbert N. Straus mansion at 9 East Seventy-First Street will be transformed into a convalescent hospital as an adjunct to St. Clare's Hospital at 415 West Fifty-First Street.

Personal.—Henry C. Sherman, Ph.D., who recently resigned as chief of the bureau of human nutrition and home economics of the U. S. Department of Agriculture, has returned to his position as executive officer of the department of chemistry at Columbia University.

James Bryan Executive Secretary of New York County Society.—James E. Bryan, White Plains, has resigned as executive secretary of the Westchester County Medical Society to accept a similar position with the Medical Society of the County of New York, effective in September.

Gonococcus Culture Service—Penicillin Treatment.—Physicians in private practice are now offered the opportunity of utilizing the gonococcus culture service of the New York City Department of Health. Specimens will be taken for culture from patients with gonorrhea or suspected of having gonorrhea. This service is available to patients of private physicians who cannot afford private laboratory service. At present examinations are made only at the central clinic, 130 Leonard Street, Manhattan.——Sulfonamide resistant gonorrheal patients may be referred for treatment with penicillin to the Leonard Street clinic, where treatment may be obtained for these patients without cost, irrespective of their economic status.

NORTH CAROLINA

State Medical Election.—Dr. Oren Moore, Charlotte, was chosen president-elect of the Medical Society of North Carolina at its annual meeting in Pinehurst and Dr. Paul F. Whitaker, Kinston, was installed as president. Other officers include Drs. William H. Smith, Goldsboro, and Zack D. Owens, Elizabeth City, vice presidents. Dr. Roscoe D. McMillan, Red Springs, is secretary-treasurer. The society voted to meet in Pinehurst again in May 1945.

OHIO

Hard of Hearing Society Changes Name.—The Cleveland Association for the Hard of Hearing, with headquarters at Garfield House, has changed its name to the Cleveland Hearing Center.

School History to Be Published.—The "Centennial History of the School of Medicine of Western Reserve University," prepared by Frederick C. Waite, Ph.D., professor emeritus of histology and embryology, was recently submitted for publication.

Civilian Physicians Awarded Service Ribbons.—A group of forty-seven physicians were presented with service ribbons at a dinner June 7 after they were cited for meritorious service by the War Department. The physicians were honored for having helped the Army and Navy examine more than 300,000 men since the induction center opened in Cleveland in January 1941, according to the Cleveland *Press*.

Ninety Years of Age.—Dr. Edwin W. Mitchell, who graduated at the Medical College of Ohio, now known as the University of Cincinnati College of Medicine, in 1882 and who served as a member of the staff through the school's development, observed his ninetieth birthday, May 29. Dr. Mitchell has served as professor of materia medica and therapeutics, professor of pediatrics and professor of theory and practice of medicine and is now professor emeritus.

PENNSYLVANIA

State Survey of Mentally Ill.—Dr. Howard K. Petry, Harrisburg, chairman of the committee on mental hygiene of the state medical society, was appointed chairman of a board appointed recently to survey state institutions for the care of the mentally ill.

Licenses Revoked.—The state board of medical education and licensure announced that the following licenses were revoked at a meeting of the board on April 26:

Dr. Francis J. Trygar, Philadelphia, because of conviction in the Philadelphia County Courts, upheld by the Superior Court of Pennsylvania, of criminal abortion.

Dr. Christos N. Spanos, Pittsburgh, because of conviction in the Philadelphia County Courts, upheld by the Superior Court of Pennsylvania, of criminal abortion.

Dr. Morton Reese, Mount Clemens, Mich., because of conviction in the Federal Court at Detroit of violation of the federal narcotic laws.

Dr. Alexander J. P. Conlen, Allentown, because of grossly unethical conduct by which he induced citizens to become a prey to exploitation.

Mrs. Mary Ferrari, midwife, Scranton, because of conviction in the Lackawanna County Court of criminal abortion.

The license of Dr. Modestus William S. Buechele, formerly of Altoona, now in the armed forces, was restored.

Philadelphia

Personal.—Dr. R. Manning Clarke, clinical professor of medicine at the College of Medical Evangelists, Los Angeles, has been appointed to a similar position at the Woman's Medical College of Pennsylvania.

Fund for Free Hospitalization of Cancer Patients.—The Dorothy Case Blechschmidt Cancer Prevention Clinic of Doctors Hospital was recently presented with a $10,000 fund for free hospitalization of cancer patients of the clinic. The clinic was organized two years ago and is named for Dr. Blechschmidt, who serves as its chief of staff. The clinic is financed by a membership of almost 1,000 women. No salaries are paid, for all the service is voluntary.

TEXAS

Narcotic Violations.—Dr. Gus Levin, Fayetteville, on March 14 pleaded guilty in the U. S. District Court in Houston to a violation of the federal narcotic law. He was sentenced to imprisonment for a term of eighteen months, which was probated for a period of five years. Dr. Charles Hudson Turner, Dallas, pleaded guilty in the U. S. District Court at Dallas, May 11, to a violation of the federal narcotic law in that he forged the name of another physician to a narcotic prescription. Sentence was suspended and Dr. Turner was placed on probation of one day, according to the federal deputy commissioner of narcotics.

Trees Dedicated to Dr. Carrell.—Two pecan trees in the Latin American quarter of Dallas were recently dedicated to the memory of the late Dr. William B. Carrell by Pan American Round Table No. 1, Dallas, of which the late physician's wife is director. Mrs. T. B. Griffith, assistant director of Pan American Round Table No. 1, presented the trees to Mayor Woodall Rodgers and the city of Dallas and to Mexican Consul Luis Perez-Abreu as well as to the Latin Americans. Special tribute was paid to the work done with crippled children by Dr. Carrell, who at the time of his death in February was professor of orthopedic surgery at the Southwestern Medical Foundation.

Closed Psychopathic Hospital to Be Opened as Venereal Disease Center.—The state board of control and the state board of health have an agreement to operate the Galveston State Psychopathic Hospital, closed since August 1943, as a rapid treatment center for venereal disease in cooperation with the U. S. Public Health Service. Facilities at the university and the fever therapy department of the John Sealy Hospital have been made available to the state board of health to assist in the new development. According to an announcement from Chauncey D. Leake, Ph.D., dean of the University of Texas School of Medicine, Galveston, it is believed that the center may become available for special research in new means of syphilis control as developed by Dr. Chester N. Frazier, professor of dermatology and syphilology at the school, and that the center may be utilized for special studies in psychiatry under the direction of Dr. Titus H. Harris, professor of neuropsychiatry, and Dr. Jack R. Ewalt, associate professor of neuropsychiatry.

VERMONT

Personal.—Dr. William J. McNamara, Fair Haven, was recently named supreme physician of the Knights of Columbus; he will be located in New Haven, Conn.

University News.—Dr. Otto Loewi, research professor of pharmacology, New York University College of Medicine, delivered the annual Sigma Xi Lecture at the University of Vermont College of Medicine, Burlington, April 28. His subject was "Chemical Mediation of Nerve Impulses." On April 27 Dr. Loewi also addressed the Osler Clinical Society at the college on "Control of Endocrine Secretions." The clinical society was addressed in Burlington, May 25, by Abraham Wikler, P. A. Surg., U. S. Public Health Service Reserve, on "Problems of Drug Addiction." Dr. Louis S. Goodman, professor of pharmacology and physiology at the university, was guest speaker at the Grafton County Medical Society, Wells River, April 26. His subject was "The Advancing Frontiers in Medical Therapeutics." Dr. Philip D. Woodbridge, professor of anesthesia, Temple University School of Medicine, Philadelphia, gave a lecture demonstration to the students and staff of the University of Vermont College of Medicine, Burlington, May 27, on "Problems of Clinical Anesthesia."

WASHINGTON

Society News.—At a meeting of the Walla Walla Valley Medical Society in Walla Walla, May 11, Dr. Charles R. Garrett was chosen president. Dr. Harlan P. Kahler is secretary. Dr. Richard D. Reekie, Spokane, discussed "Water Balance in Pregnancy."

Personal.—Dr. Willis E. Smick has resigned as deputy county health officer of Kittitas.——Dr. Percy F. Guy, Seattle, has been named assistant health officer of King County, succeeding Dr. Bryan Newsom, county epidemiologist, who resigned April 1 to enter private practice. It was stated that the position of assistant health officer will include most of the former duties of Dr. Newsom as epidemiologist.

Statewide Mental Program for Rehabilitation of Service Men.—The Washington State Medical Association and the state department of health are planning to inaugurate sometime in August a statewide mental health program for the rehabilitation of discharged service men not covered by the Veterans Bureau. A committee on mental hygiene has been appointed by the state medical association to act in advisory capacity to the state health department. The plans call for the employment of three teams composed of three each, a psychiatrist, a psychologist and a social worker trained in psychiatry, with possibly one of the teams stationed in eastern Washington and two on the west side. The board of trustees of the state medical association approved the program proposed by the state department of health with the provision that the committee on mental hygiene act in an advisory capacity.

Proposed Medical School.—The board of trustees of the Washington State Medical Association has appointed a committee to study the recommendation to establish a medical school for the University of Washington, Seattle. The committee is to make a report to the house of delegates of the state association. Members of the committee include the following physicians:

David Metheny, Seattle, chairman.
Homer D. Dudley, Seattle, 1st district.
Albert P. Duryee, Everett, 2d district.
Milton P. Graham, Aberdeen, 3d district.
George W. Cornett, Yakima, 4th district.
George H. Anderson, Spokane, 5th district.
Warren B. Penney, Tacoma, 6th district.
Vernon W. Spickard, Seattle, president, state association, ex officio.
Albert J. Bowles, Seattle, secretary, state association, ex officio.
David C. Hall, Seattle, University of Washington Health Department, ex officio.

A subcommittee was also named composed of Drs. Metheny, Dudley, Duryee and Hall. If the regents of the university and the state medical association are agreeable on the establishment of the school, it is believed that the two groups will jointly initiate legislation for the appropriation of funds in the coming session of the state legislature when it meets in January 1945, according to *Northwest Medicine*.

GENERAL

Life Expectancy Gains.—The average length of life in American people had advanced in 1942 to 64.82 years, the highest figure on record, a gain of 15½ years since 1900, according to statisticians of the Metropolitan Life Insurance Company. An announcement from the company points out that a greater proportion of persons now than ever before will live to age 65, the normal retirement age. In fact, it was stated, more than two thirds of persons now between ages 25 and 35 will reach age 65, while almost three fourths now 45 years old and four fifths of the persons now 55 will attain that age. After attaining age 65, the average person can still look forward to living 13.12 years longer.

Voluntary Tests for Medicine.—In Atlanta, Ga., 15 men at the federal penitentiary are ill with malaria in a voluntary test supervised by the National Research Council, U. S. Public Health Service, Army and Navy medical officers, newspapers reported June 11. A group of 15 other prisoners are reporting to the prison laboratory daily for blood tests, it was stated. The men volunteered to act as "guinea pigs" in this study. They will be under observation for eighteen months (THE JOURNAL, March 18, p. 786). Another newspaper report, May 22, states that twenty-six physicians, nurses and students from the University of California Medical School, San Francisco, submitted to various forms of torture in the preparation of a "pain map" of the body. It was stated that the project involved the piercing of muscles with sharp instruments and drilling of bones. The subjects not only bore their pain but also gave a running account of their sensations, it was reported.

Industrial Hygiene Groups Choose Officers.—Officers of the National Conference of Governmental Industrial Hygienists chosen at its meeting in St. Louis in May include Mr. Manfred Bowditch, director, division of occupational hygiene, Massachusetts Department of Labor and Industries, Boston, chairman; Dr. Leslie W. Foker, director, division of industrial health, Minnesota Department of Health, Minneapolis, vice chairman, and Senior Sanitary Engineer J. J. Bloomfield, chief, field operations section, industrial hygiene division, U. S. Public Health Service, Bethesda, Md., secretary-treasurer.——At a meeting of the American Industrial Hygiene Association also in St. Louis Dr. Robert A. Kehoe, Kettering Laboratory of Applied Physiology, University of Cincinnati College of Medicine, was chosen president-elect and Mr. Bloomfield was inducted into the presidency. Other officers include Edgar C. Barnes, industrial engineer, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., secretary, and John B. Littlefield, industrial hygienist, American Brake Shoe and Foundry Company, Chicago, treasurer.

Society News.—The Biological Photographic Association will hold its fourteenth annual meeting in Binghamton, N. Y., September 7-9, under the presidency of Ferdinand R. Harding, Boston. The association is a nonprofit organization for the study of photography as applied to medicine, dentistry and the biologic and natural sciences. Additional information may be obtained from Anne Shiras, secretary of the association, University Office, Magee Hospital, Pittsburgh 13.——The ninth annual assembly of the International College of Surgeons will be held October 3-5 at the Benjamin Franklin Hotel, Philadelphia. The program will be devoted to war, rehabilitation and civilian surgery. The assembly is sponsored by the United States chapter of the college, of which Dr. Thomas A. Shallow, Philadelphia, is president.——The Association of Military Surgeons of the United States will hold its annual meeting at the Pennsylvania Hotel, New York, November 2-4. Col. Charles M. Walson, M. C., U. S. Army, Headquarters Second Service Command, Governors Island 4, New York, is chairman of the convention and program committees.——The National Medical Association will hold its fiftieth annual convention in St. Louis, August 14-17, as the guest of the Mound City Medical Forum. Dr. John T. Givens, 1108 Church Street, Norfolk, Va., is general secretary of the association.

Meningococcic Meningitis in the United States.—In 1943 the United States experienced the highest incidence of meningococcic meningitis during the thirty years since the public health service began the collection of morbidity data of this disease in 1914, according to *Public Health Reports*. Preliminary reports show that a total of 17,974 was reported by the state health authorities of forty-eight states and the District of Columbia, an incidence of 13.4 per hundred thousand of population. The next highest reported incidence was in 1929, when 10,551 cases were reported in forty-six states and the district, giving an incidence rate of 8.7 per hundred thousand of population. *Public Health Reports* shows that the incidence rate for the country as a whole was 50 per cent higher in 1943 than in 1929, the highest rates being recorded in the New England, Middle Atlantic and Pacific areas. Figures for total deaths from meningococcic meningitis during 1943 were not available at the time of this report, but on the basis of the average of the monthly rates for a 10 per cent sample of death certificates, issued by the Bureau of Census, and the incidence rate the case fatality ratio was 16.4. While not strictly comparable, but probably more nearly complete, the reports for 1943 for thirty-two cities scattered throughout the United States give a case fatality of 18.4 per cent. The ratio for California was 16.9, while for that for New York City was 16. The report indicates that the greater part of the recent reduction in the fatality for meningococcic meningitis is due to the introduction of chemotherapy, emphasis being placed on the effectiveness of sulfonamide therapy.

Grants for Poliomyelitis Research.—Twenty-seven grants totaling $1,128,770 for work on infantile paralysis were announced June 21 by the National Foundation for Infantile Paralysis. All grants in effect July 1 will strengthen the foundation's program of seeking ways and means of alleviating suffering of victims of the disease and methods emphasizing the search for a preventive or cure. The total appropriations include three long term programs of five years each, two of which, totaling $495,000, are to improve knowledge in the field of physical medicine. These two grants provide for the establishment of two "units for research in physiology as related to physical medicine," the larger of which will be at the University of Minnesota Medical School, Minneapolis, with a grant of $320,000. Under a grant for $175,000 the second unit will be established at Northwestern University Medical School, Chicago, one of the first institutions to adopt a department of physical medicine. The grant will assist the university in expanding its program of scientific investigation and training of investigators and teachers in the field of physical medicine. A third long term grant of $325,000 will go to the University of Michigan School of Public Health, Ann Arbor, to finance and operate an expanded virus study unit. The work will include a program of field and laboratory investigation of poliomyelitis and other virus diseases, including a study of the disease where it becomes established in a community and the manner in which it spreads and the maintenance of a virus laboratory particularly adapted and available for use by clinicians working with this disease. The program will include a search for a rapid indirect method of recognizing the poliomyelitis virus by use of the high speed centrifuge, Tiselius apparatus and other biophysical equipment available at the Michigan Department of Health laboratories and with the electron microscope and laboratory facilities at the university, thus obtaining a purified and concentrated virus. It is hoped that in this manner methods may be developed from these purified materials for rapid identification of the virus in diagnosis of the infection. The Michigan project began about three years ago. The enlarged unit will continue to be under the direction of Dr. Thomas Francis Jr., professor of epidemiology and chairman of the department. At the University of Minnesota a unit will be set up for studies in the area of physiologic investigation of the basis for physical medicine procedures applicable to poliomyelitis and other diseases. The problems involved will call for the coordinated activities in the field of neurophysiology and other branches of physiology, biochemistry, pharmacology, neuropathology, neuroanatomy, clinical neurology, pediatrics, orthopedics and physical therapy. The general direction of the proposed investigation will be assigned to a committee consisting of the heads of the departments concerned in the University of Minnesota Medical School. The chairman of the committee will be Dr. Maurice B. Visscher, professor and head of the department of physiology. The Northwestern grant will intensify research in basic medical sciences in the varied phases in the field of physical medicine. Under this grant studies will be pursued relative to the use in diagnosis and treatment of electricity, light, heat, cold, exercise, rest and other physical measures. The effects of these forces on nerves and muscles damaged by diseases such as infantile paralysis will make up a major part of the study. While many of the projects have been in operation for the past several years with aid of the national foundation, it now seems advisable to the university to enlarge the scope of the program by including all departments concerned on a cooperative basis, making possible many lines of investigation which otherwise could not be undertaken. The unit will be under the direction of Dr. Andrew C. Ivy, Nathan Smith Davis professor and head of the department of physiology and pharmacology. Of the total of $1,128,770 the amount allotted for work on "after-effects" is $536,500, on virus research $392,400 and on education $199,870.

Government Services

Allocation of Quinidine

On June 9 the War Production Board amended the order governing allocation of cinchona bark and cinchona alkaloids to permit the delivery of quinidine to an ultimate consumer on the receipt of a prescription signed by a person who is licensed to prescribe drugs. Only physicians licensed to practice medicine were permitted to prescribe quinidine prior to this revision. Quinidine may be used only for the treatment of cardiac disorders, according to the War Production Board.

Senior Specialist in Health Education Named

Lester A. Kirkendall, Ph.D., educational consultant, Venereal Disease Education Institute, Raleigh, N. C., has been temporarily assigned within the Federal Security Agency from the United States Public Health Service to serve as senior specialist in health education in the division of physical education and health activities in the U. S. Office of Education. He will serve schools and colleges in fields given such designations as social hygiene and "human relations."

Distribution of Lanham Funds

The Federal Works Agency has allotted $2,532,266 of Lanham Act Funds. A total of $1,865,528 was allotted to nineteen war public works projects in twelve states, with an estimated cost of $2,566,984. Contributions amounting to $666,638 were approved for fifteen war public services projects in ten states. Nine of the war public works projects are for nurses' homes and training facilities. Included also are projects for the construction of sewer, school, child care, hospital and recreation facilities. The war public services projects provide assistance in the maintenance and operation of school, child care, recreation, garbage and police facilities.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 27, 1944.

The British Medical Association and the White Paper

In a previous letter (THE JOURNAL, March 25, p. 941) the white paper on a national health service, issued by the government, was summarized and the immediate reaction of the British Medical Association was given. The council has now put forward for the consideration of the profession a statement of policy which is intended to be the basis of discussion at meetings of the whole profession. The medical profession is declared to be in complete agreement with the government's aim to ensure that every one shall be able to obtain all the advice and treatment needed in matters of health and that the country's full resources are brought to bear on reducing ill health. The profession, particularly in the last quarter of a century, has again and again pressed on the government developments to this end, but without avail. It is natural that public interest in health should be heightened in time of war, but it is ironic that the government should begin to display a lively interest in organizing medical services at a time when the medical profession and its organizations are almost wholly preoccupied with the problems of war. As a result of recruitment for war service, doctors in civilian practice are heavily overworked. Many of the younger members of the profession who are vitally concerned with these proposals are in the fighting services, and effective consultation with them is difficult. A controversial issue has been raised at a time when the energies of the profession, like those of the whole community, should be directed to one objective—winning the war. There is suspicion that these proposals found their first inspiration in a desire to control an independent profession in order to control certification and thus the disposal of social security funds. The council of the association detects in the white paper a "trend of the times," a move toward planned state control. But the council feels that the state should spare from its bureaucratic intentions a form of human activity which, in an atmosphere of independence and freedom, has made more progress than it could possibly have made under the egis of the state.

The Council makes the following criticisms of details: The proposed central administration is unsatisfactory. The Ministry of Health is left responsible for a number of functions only remotely associated with health. For example, the ministry is left responsible not only for such problems of housing as are clearly related to health but also for supervising the local authorities in actual construction, which is a matter for architects, builders and engineers. Side by side with the Ministry of Health is proposed an advisory body, the Central Health Council, to represent medical practice and teaching, hospital organization and other professional matters. This conforms to the pattern of advisory bodies set up in recent years, of which many have proved useless. They have been façades to protect ministers rather than to advise them. The association cannot accept as an appropriate advisory body to present and effect medical opinion one which is appointed by the minister and which reports only through him. Such a body, as far as its medical members are concerned, should be appointed by the profession. Further, both Parliament and the public are entitled to know what advice has been tendered and whether it has been accepted or not.

At a press conference Dr. H. G. Dain, chairman of the council of the British Medical Association, said that the council had expressed approval of the general principles of the white paper but objected to many of the proposals. The proposed administrative structure was uncoordinated and chaotic, it was felt. Moreover, no provision was made for the profession to be democratically represented on the advisory bodies or for it to be able to make its advice and views freely known to Parliament and to the public. The voluntary hospitals would in time be submerged, the council feared, which was not in the public interest. Only one type of health center, the communal surgery, was proposed. No provision was made for experiment with other types, such as the diagnostic center. The doctors working in the health centers would be remunerated by salary or similar arrangement; the profession regards this as an attempt to introduce by insidious means a state salaried service, to which it is opposed because it is not prepared to substitute obedience to the state for loyalty to the patient. Remuneration should be related to the amount of work done and not determined by status, it is claimed.

Lord Dawson, president of the British Medical Association, added that there was no disagreement with the principles of a comprehensive health service, which had been advocated by the profession for years. The fundamental fault of the white paper, he said, was that it tried to see too far, to stretch out into the years ahead. At no time was it more difficult than it is now, Lord Dawson stated, to look into the conditions of the future. The program instead should concentrate on what is essential as a foundation; he put first the bringing together of curative and preventive medicine, between which there is a wide gap.

The correspondence columns of the *British Medical Journal* show widespread concern and dissatisfaction with many of the proposals in the white paper. The annual representative meeting of the association will begin on July 18, when the white paper will be the predominant subject for discussion. For this purpose a negotiating committee is to be appointed. It is recommended that this should consist of thirty members, sixteen to represent the British Medical Association, three each the Royal Colleges of Physicians and Surgeons, two the Royal College of Obstetricians and Gynecologists, three the Royal Medical Scottish Corporations, two the Society of Medical Officers of Health and two the Women's Medical Federation.

The Use of Gas Gangrene Antitoxin

The *Army Medical Department Bulletin* points out that the incidence of gas gangrene in the African campaigns of the war has been as high as that in France in the last war and the mortality was a black spot in the otherwise satisfactory recovery rate from wound infections. One of the principal means of improvement is greater use of gas gangrene antitoxin. The conditions that call for injection of prophylactic antitoxin are extensive laceration of muscle, as in compound fracture, obvious contamination of the wound with soil, clothing or other foreign bodies, interference with blood supply (as by tourniquet or tightly packed dressing) and delayed surgical treatment. Wounds of the buttocks and legs are those most frequently associated with the development of gas gangrene, and it must be remembered that small surface wounds may mark the entry of missiles which cause deep, extensive muscle damage, the *Bulletin* points out.

Whenever possible antitoxin should be given intravenously, so that an effective concentration of antibody may be immediately available. If intravenous administration is impossible, antitoxin should be given intramuscularly into healthy tissue. The subcutaneous route should never be used, and there is no advantage in injecting the dose into the region around the wound. For either route the prophylactic dose is the same—the amount of polyvalent antitoxin containing 9,000 units of Clostridium welchi antitoxin. This contains other antitoxins against such anaerobes as Clostridium oedematis maligni and Clostridium septicum. A decision as to whether or not to repeat the prophylactic dose calls for clinical judgment in the light of conditions in the wound and the general picture.

Therapeutic administration is called for urgently at the earliest signs of infection. These may be no more than a feeling of weight in the limb or stump, local pain and swelling, quickening of the pulse or altered mental outlook. In an established case, antitoxin should be given intravenously; when suitable it may be given in intravenous drip with blood, plasma or saline solution. In exceptional circumstances there may be no alternative to intramuscular administration. The initial dose should contain not less than 27,000 units of Cl. welchi antitoxin and needs repetition at intervals of four to six hours according to the condition of the patient. No figure can be given for the total dosage which may be necessary to neutralize the toxemia. Successful chemotherapy with penicillin, sulfonamides or other drugs does not lessen the need for large doses of antitoxin. The risk of severe allergic reactions is no greater than from any other antitoxin and is almost negligible if refined (pepsin treated) antitoxin is used. But, as with all antitoxins, epinephrine should be at hand for injection in case of reaction, the article concludes.

BRAZIL

(From Our Regular Correspondent)

May 10, 1944.

Cultivation of Cinchona in Brazil

The Division of Vegetal Production of the Department of Agriculture has just published a monograph by the agricultural technologist A. Caminha Filho reviewing all the attempts to cultivate the cinchonas in Brazil since the first experiments in 1868, in the high plateau of Teresopolis, under the patronage of the late emperor Pedro II until the present large scale attempts in the state of São Paulo under the direction of Luiz A. Nucci, agricultural technologist. In spite of the fact that this is where the cinchona plants originated, South America depends on importation for all the quinine it needs. In Brazil, where a large campaign against malaria is now developing, cultivation of the cinchonas is a problem of the utmost importance. As Mr. Caminha Filho points out, the agricultural exploitation of the plant should be studied and begun at once and increased as rapidly as possible. For this purpose he suggests the creation of a specialized service in the Division of Vegetal Production with the cooperation of the Institute of Agricultural Experimentation. According to the biology of the plant, the monograph suggests as convenient places for the initial culture the National Park of Itatiaia, the National Park of the Orgãos Mountain and the high plateau of Friburgo. According to the author, the initial plantations should include a total of at least 800 acres.

Pollen Allergy

In a previous letter (THE JOURNAL, Jan. 23, 1943) reporting the work of Dr. Ernesto Mendes of São Paulo, it was pointed out that allergic conditions with such a seasonal character that one could assume pollens to be their cause are not found in Brazil. Dr. Mendes believes that the extremely low incidence of pollen allergy is due to environment rather than to individual peculiarities, as potent allergenic plants are few in this country and meteorologic conditions do not favor high concentrations of pollen in the air. The pollens of potent allergenic plants were found to be fewer than 15 per cubic centimeter at that time. Since then new studies have been undertaken and several papers have been published that cast more light on this problem. Among these studies the most important are those carried out by Dr. A. Oliveira Lima of Rio de Janeiro and Dr. J. B. Greco of Bello Horizonte, state of Minas Geraes. They claim that the rarity of pollinosis in Brazil is explained by several causes, among them the scant interest of physicians in this subject and errors of diagnosis. (Many cases of seasonal pollen rhinopathy are simply labeled common colds.) Another factor is the predisposition typified by the low sensitivity of Brazilians to the pollen of Lithrea moleoides. A large number of American patients sensitive to Rhus toxicodendron, as reported in a letter from Shelmire to Oliveira Lima, were also sensitive to the toxiallergenic fraction of the Brazilian Lithrea. Greco reports results obtained by him and by Oliveira Lima in sixteen Brazilian cities in the east central section of the country, including Rio de Janeiro, Campinas in the state of São Paulo, Salvador in the state of Bahia and thirteen others in the state of Minas Geraes. He reports the existence of a short, typical pollen season from the middle of May to the middle of June (autumn in the Southern Hemisphere). The only important plants of allergenic activity pertain to the gramineous family, particularly the fatty grass Melinis minutiflora.

Brief Items

Dr. C. E. Turner of the Massachusetts Institute of Technology and a staff member of the Division of Health and Sanitation of the Office of the Coordinator of Inter-American Affairs has spent several days in Rio de Janeiro visiting the services of health education. He delivered an address at a special meeting of the Brazilian Society of Hygiene and was entertained by this association during his stay in the city.

Dr. J. Caiado de Castro of Rio de Janeiro died a few days ago at the age of 37. Dr. de Castro was an able surgeon and laryngologist who had a notable record in the field of bronchoscopy and esophagoscopy and in the extraction of foreign bodies from the esophagus, the trachea and the bronchi. His death was deeply felt by his colleagues of the Department of Hospitals of the city of Rio de Janeiro, where, in the exercise of his activity, he had performed more than 5,000 tonsillectomies and more than 2,000 extractions of foreign bodies from the respiratory and digestive tracts.

Dr. Armando Tavares, professor of medicine at the medical school of Salvador, state of Bahia, died at the age of 50. Dr. Tavares was one of the leading specialists in tuberculosis, in which field he had published several important contributions.

Dr. Charles Philippe Leblond of McGill University has spent a few days in Rio de Janeiro. He read a paper on "The Iodine in the Thyroid" in which he brought into focus, in particular, the transformations undergone by this substance as shown by radioactive iodine.

A cablegram from Lima, Peru, reports the good results of the use of penicillin prepared at the Instituto Oswaldo Cruz of Rio de Janeiro and sent by air mail through the Brazilian embassy at Lima for the treatment of a desperate case of septicemia.

Dr. Erasmo Gaertner, professor of surgery at the medical school of Curitiba, state of Paraná, spent a few days at Rio de Janeiro to visit some important medical institutions of the city. Specially invited by the medical board of the Misericordia Hospital, Dr. Gaertner read a paper, with demonstrations, on the surgical treatment of aneurysms.

Marriages

EDWIN A. HENDRY, Portland, Ore., to Miss Gladys H. Scott of North Bennington, Vt., in New York, February 19.

JOSEPH M. COPPOLETTA, Cliffside Park, N. J., to Miss Dorothea M. Ellis Carousis in New York, June 11.

RICHARD ELI HEDRICK, Winston-Salem, N. C., to Miss Carol Clinton Reid of Columbia, S. C., June 6.

JOHN WELDON WILLIAMS JR. to Miss Laura Ruth Veal, both of Augusta, Ga., May 20.

EDWARD B. MCCABE, Carbondale, Pa., to Miss Mary M. Hunt of Archbald, May 20.

RUSSELL W. BERNHARD to DR. ELIZABETH THORNTON, both of San Francisco, June 11.

Deaths

Henry James Spencer ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1913; formerly associate professor of clinical medicine at Cornell University Medical College; diplomate of the National Board of Medical Examiners, of which he had been past president; specialist certified by the American Board of Internal Medicine; fellow of the New York Academy of Medicine, associate member of the Harvey Society, fellow of the American Association for the Advancement of Science; member of the American Heart Association, New York Tuberculosis and Health Association and the American Institute of Nutrition; assistant attending physician to the Hudson Street Branch of the New York Hospital from 1917 to 1919; served as assistant attending physician, attending physician, president of the medical board and consulting physician at the Willard Parker Hospital; associate attending physician, New York Hospital; visiting physician and director, second medical division, Bellevue Hospital; associate visiting consultant in medicine at the Children's Hospital, Randall's Island, from 1920 to 1928; formerly on the staff of the Lincoln Hospital; organizer and chief, department of metabolic diseases, Cornell Clinic, from 1921 to 1931; contract surgeon attached to the Second Service Army Command; died June 11, aged 60.

Erasmus Darwin Fenner ✠ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1892; professor of orthopedics and surgical diseases of children, emeritus, at his alma mater; he joined the teaching staff in 1893, serving as associate professor of the diseases of children from 1903 to 1907, when he became head of a newly created department of orthopedics; resigned from this position in 1927; past president of the Orleans Parish Medical Society; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; specialist certified by the American Board of Orthopaedic Surgery, Inc.; captain, medical reserve corps, U. S. Army, June 15, 1917; assigned to duty with Base Hospital number 24, Aug. 31, 1917; liaison officer, 12th Region, June 1918-January 1919; major in the medical corps Nov. 9, 1918; honorably discharged April 24, 1919; decorated Officer d'Académie by French government; in 1942 honored at ceremonies at the Charity Hospital and given a silver cup for his fifty years of untiring service to the institution; chief, independent division of orthopedics and fractures and senior visiting surgeon at the hospital; consultant in orthopedics at the Mercy Hospital-Soniat Memorial; died June 7, aged 75.

David I. Wolfstein, Cincinnati; Medical College of Ohio, Cincinnati, 1888; professor emeritus of psychiatry at the University of Cincinnati College of Medicine, where he had been a member of the board of trustees from 1912 to 1921; formerly professor of pathology at his alma mater; member of the American Neurological Association; served on the staffs of the Cincinnati General and Jewish hospitals, Cincinnati, and the Speer's Memorial Hospital, Dayton, Ky.; instrumental in building the new Cincinnati General Hospital; active in the establishment of the modern board of health and in the campaign for pure milk; in 1898 received the Fiske Fund prize for his essay on "Relation of the Neuron Theory to Diseases of the Nervous System"; a member of the House of Delegates of the American Medical Association in 1905; formerly president of the City Club; died June 7, aged 82, of congestive cardiac failure and arterial disease.

Herman Sinclair Judd, Fort Steilacoom, Wash.; Rush Medical College, Chicago, 1895; member of the Washington State Medical Association; served in the medical corps of the U. S. Army during World War I; at one time surgeon for the Homestake Mining Company at Lead, S. D.; served for five years with the U. S. Veterans Bureau, for a time with the Cushman Hospital, Tacoma, and as acting clinical director of the U. S. Veterans Hospital, Palo Alto, Calif.; formerly city director of health of Tacoma and superintendent of the Tacoma Contagious Hospital; for three months relieved the health commissioner of Alaska; in 1933 appointed surgeon in the Indian Service, U. S. Department of Interior, Prince of Wales Island, Alaska; since 1934 on the staff of the Western State Hospital, where he had been on the staff from 1919 to 1921; died April 19, aged 71, following a prostatectomy.

Jacob F. Burkholder ✠ Chicago; Western University Faculty of Medicine, London, Ont., Canada, 1892; formerly president, professor and head of the department of anatomy, and professor of biology and ophthalmology, Reliance Medical College; at one time president and treasurer, board of directors, professor and head of the department of anatomy, Illinois Medical College; served as junior dean, professor of ophthalmology and head of the department at Bennett Medical College of Chicago, Medical Department of Loyola University; formerly professor of anatomy at the Chicago Eye, Ear, Nose and Throat College and professor of physiology in the University of Illinois College of Dentistry; author of "Anatomy of the Brain"; died June 7, aged 82, of myocarditis with dilatation.

Hugh Jameson ✠ Titusville, Pa.; University of Edinburgh Faculty of Medicine, Edinburgh, Scotland, 1889; fellow of the American College of Surgeons; examiner for the draft board during World War I; served as member and for many years president of the board of health; a member of the City Council and a member of the school board; a member of the surgical staff and for many years president of the Titusville Hospital; served as a director of the Y. M. C. A. and the chamber of commerce; a member and past president of the Rotary Club; since 1924 surgeon for the Pennsylvania Railroad; died April 20, aged 77, of chronic valvular heart disease.

William Kress McIntyre ✠ St. Louis; St. Louis University school of Medicine, 1923; specialist certified by the American Board of Surgery; member of the American Proctologic Society and fellow of the American College of Surgeons; assistant in surgery at his alma mater from 1928 to 1938, when he became instructor and since 1941 had been senior instructor in surgery; assistant surgeon, St. Mary's Group of Hospitals, and St. Anthony's Hospital; on the surgical staff, De Paul Hospital; proctologist, Isolation Hospital, City Sanitarium and City Infirmary; proctologist, St. Louis County Infirmary, Clayton; died April 29, aged 47, of lymphosarcoma.

August Edward Witzel, Newark, N. Y.; Syracuse University College of Medicine, 1916; member of the Medical Society of the State of New York; fellow of the American Psychiatric Association; formerly senior assistant physician at the Utica State Hospital, Utica; served as director of clinical psychiatry and assistant physician at the Brooklyn State Hospital; on July 1, 1940 became acting medical inspector for the state department of mental hygiene and held that post until Oct. 1, 1940, when he was appointed medical superintendent of the Newark State School; died May 15, aged 53, of coronary thrombosis.

Arthur A. Stevens ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1886; formerly professor of applied therapeutics at his alma mater and professor of materia medica, therapeutics and clinical medicine at the Woman's Medical College of Pennsylvania; served on the staffs of the Episcopal, Philadelphia General and St. Agnes hospitals; author of "A Text-Book of Therapeutics," "A Manual of the Practice of Medicine" and "The Practice of Medicine"; co-author with Florence A. Ambler of "A Textbook of Medical Diseases for Nurses"; died June 10, aged 79, of coronary thrombosis.

William Daniel Snively ✠ Rock Island, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; past president of the Rock Island County Medical Society; served as treasurer of the Illinois-Iowa Central District Medical Association; examiner for the draft board during World War I and II; a member of the staff, and for many years instructor of obstetrics in the school for nurses, St. Anthony's Hospital; on the staffs of the Public Hospital and the Lutheran Hospital, Moline, where he died April 5, aged 71, of carcinoma of the stomach.

C. A. Barron, Kingsland, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1912; died April 24, aged 57, of heart disease.

George William Belting, Orfordville, Wis.; Northwestern University Medical School, Chicago, 1909; member of the State Medical Society of Wisconsin; past president of the Rock County Medical Society; died April 17, aged 65, of cerebral hemorrhage.

Walter Griswold Bisbee, Bristow, Okla.; Dartmouth Medical School, Hanover, N. H., 1901; member of the Oklahoma State Medical Association; served as secretary of the Creek County Medical Society; a captain in the medical corps of the U. S. Army during World War I; on the staff of the Cowart-Sisler Hospital; a member of the Rotary Club; died March 17, aged 67, of angina pectoris.

Joseph F. Bowen, Rushville, Ind.; Medical College of Indiana, Indianapolis, 1897; member of the Indiana State Medical Association; past president of the Rush County Medical Society; on the staff of the Henry County Hospital, New Castle, and formerly on the staff of the City Hospital; died April 21, aged 73, of cerebral hemorrhage.

George Thomas Brinkley ✠ Whiteville, Tenn.; Memphis Hospital Medical College, 1902; past president of the Fayette-Hardeman Counties Medical Society; city health officer; a director of the Whiteville Savings Bank; died April 10, aged 68, of coronary occlusion.

George Newton Bussey ✠ Chicago; Rush Medical College, Chicago, 1893; fellow of the American College of Surgeons; co-founder and on the staff of the Ravenswood Hospital, where he died May 1, aged 78, of myocardial failure, chronic arteriosclerotic myocarditis and chronic pyelonephritis.

George Beresford Caulfield, Bangor, Maine; Tufts College Medical School, Boston, 1898; died April 4, aged 79, of heart disease.

Leon Cherurg, New York; University of Dorpat Faculty of Medicine, Russia, 1884; Eclectic Medical College of the City of New York, 1889; died in the Columbus Hospital April 18, aged 82, of arteriosclerotic heart disease and decompensation.

Albert Briton Clark, Swartz Creek, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1889; served during World War I; formerly affiliated with the Hurley and St. Joseph hospitals, Flint; died April 17, aged 78, of carcinoma.

Mildred Naomi Johnson Clark, Omaha; University of Nebraska College of Medicine, Omaha, 1925; clinical assistant in obstetrics at her alma mater; on the staffs of the Bishop Clarkson Memorial and the University of Nebraska hospitals; in 1938 president of the Omaha chapter of the American Medical Women's Association; for many years physician for the Juvenile Court; physician for the Maternal Health League and trustee of the Nebraska Crippled Children's Society; died April 3, aged 44, of coronary thrombosis.

John Gerard De Bey ✠ Orange City, Iowa; Drake University College of Medicine, Des Moines, 1910; died April 17, aged 60, of heart disease.

Robert Edward De Witt, Abilene, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1899; member of the State Medical Association of Texas; served as director of the Delta County Health Unit; for a short period assistant superintendent of the Austin State School, Austin; since October 1943 director of the Abilene-Taylor County Health Unit; died April 2, aged 64, of coronary occlusion.

Benjamin Matthew Domser ✠ Syracuse, N. Y.; Syracuse University College of Medicine, 1910; on the staffs of the Hospital of the Good Shepherd, Syracuse University and St. Mary's Maternity Hospital; died April 26, aged 67, of cerebral hemorrhage.

John Adams Drake Jr., Monroe, Va.; Medical College of Virginia, Richmond, 1903; died in the Lynchburg General Hospital, Lynchburg, April 14, aged 62, of bronchopneumonia and carcinoma of the larynx with pulmonary metastasis.

LIEUT. (JG) EDWARD D. CURTIN, (MC), U.S.N.R., 1915-1944

Robert J. Ferguson, New Haven, Conn.; Hahnemann Medical College and Hospital of Philadelphia, 1899; member of the Connecticut State Medical Society and the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; a member of the consulting staff at Grace Hospital; died in the Flower and Fifth Avenue Hospital, New York, May 15, aged 72, of carcinoma of the cecum with metastasis.

David Henry Galloway, Roswell, N. M.; College of Physicians and Surgeons of Chicago, 1893; on the staff of St. Mary's Hospital; died March 30, aged 85, of chronic myocarditis.

Robert Hunter Garthright, Vinton, Va.; Medical College of Virginia, Richmond, 1885; member of the Medical Society of Virginia; died May 2, aged 86, of cerebral thrombosis.

Edward Francis Gleason, Hyannis, Mass.; University of Vermont College of Medicine, Burlington, 1899; member of the Massachusetts Medical Society; one of the first members of the staff at Cape Cod Hospital; died April 9, aged 75.

Warren Francis Greene, Erie, Pa.; University of Buffalo School of Medicine, 1941; member of the Medical Society of the State of Pennsylvania; diplomate of the National Board of Medical Examiners; first lieutenant in the medical reserve corps, U. S. Army, not on active duty; on the staff of St. Vincent's Hospital, where he died April 24, aged 29, of leukemia.

George Albert Hass, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; served during World War I; died April 16, aged 56, of cerebral thrombosis, arteriosclerosis and cirrhosis of the liver.

Alonzo Albert Holdbrooks, New York; Howard University College of Medicine, Washington, D. C., 1915; died April 19, aged 61, of burns received when his home caught fire.

Albert Clare Holley, Attica, Ind.; the Hahnemann Medical College and Hospital, Chicago, 1896; member of the Indiana State Medical Association; died in the Maris Hospital, Williamsport, April 26, aged 71, of pernicious anemia.

Nehemiah Janko ✠ New York; Baltimore University School of Medicine, 1898; an Affiliate Fellow of the American Medical Association; died April 13, aged 71, of heart disease.

Clyde White Jones, West Blocton, Ala.; University of Alabama School of Medicine, 1912; member of the Medical Association of the State of Alabama; died April 9, aged 55, of acute myocarditis, coronary thrombosis and decompensation.

William Anthony King, Pittsburgh; Temple University School of Medicine, Philadelphia, 1927; member of the Medical Society of the State of Pennsylvania; served on the staff of the Western Pennsylvania Hospital; died April 25, aged 47, of coronary occlusion.

Charles John Laserte ✠ Leominster, Mass.; Baltimore Medical College, 1905; chief of medical staff, Leominster Hospital; died April 14, aged 63, of coronary thrombosis.

Michael William Lash ✠ Detroit; Wayne University College of Medicine, Detroit, 1938; served a residency in urology at the Chenik Hospital and one in surgery at the Providence Hospital, where he died April 8, aged 30, of virus bronchopneumonia.

William Joseph Powers, Holyoke, Mass.; Baltimore Medical College, 1902; died February 6, aged 64.

Benjamin Spottswood Preston, Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1902; also a pharmacist; member of the West Virginia State Medical Association; served as medical director for the Hillcrest Sanatorium; formerly chief of staff of the Charleston General Hospital; member of the Rotary Club; died at Lewisburg, April 19, aged 70, of cerebral hemorrhage.

Henry James Profant ✠ Santa Barbara, Calif.; Rush Medical College, Chicago, 1920; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; member of the staffs of the Santa Barbara Cottage, Santa Barbara General and St. Francis hospitals; died April 29, aged 51, of ruptured left ventricle.

Marion Roman Siudzinski, ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1914; served during World War I; assistant roentgenologist on the staff of St. Catherine's Hospital; died May 6, aged 53, of cerebral hemorrhage.

Charles D. Stratton ✠ Rothville, Mo.; Missouri Medical College, St. Louis, 1883; past president of the Chariton County Medical Society; died April 5, aged 85, of bronchopneumonia.

Arthur Deming Whiting, St. Cloud, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1895; died March 19, aged 71, of coronary thrombosis due to hypertension.

Dayton Henry Clinton Wilson, Philadelphia; Temple University School of Medicine, Philadelphia, 1921; died in the Graduate Hospital March 20, aged 52, of myocardial failure, hypertension and cardiorenal disease.

KILLED IN ACTION

Edward Draper Curtin, San Bernardino, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1941; served an internship at the Los Angeles County Hospital, Los Angeles; prior to the time when he was commissioned in the U. S. Navy he served as surgeon in the Douglas Aircraft Company in Iran, where he was stationed for fifteen months, and later in Eritrea; lieutenant (jg), medical corps, U. S. Naval Reserve; awarded Purple Heart posthumously on April 24; died in the Pacific area March 27, aged 28, of multiple wounds.

Correspondence

PRESCRIPTION WRITING

To the Editor:—The significance of Dr. Kretschmer's article (THE JOURNAL, June 3, p. 326) will be obvious to many physicians.

In my book on Pharmacology and Therapeutics I wrote: For three obvious reasons the writing of prescriptions is the dread of the young medical practitioner. These reasons are (1) fear that he may not express his desires correctly, (2) distrust in his ability to make satisfactory combinations or palatable mixtures, (3) anxiety lest a faulty construction should make him the subject of the pharmacist's criticisms.

If a physician cannot write, or is afraid to write, for what he wants he has no recourse but ready made formulas.

Four classes of teachers might be called on to teach prescription writing: pharmacologists, clinical teachers, pharmacists and physicians who have graduated in pharmacy.

Pharmacologists: As Dr. Kretschmer ascertained, of the teachers of pharmacology responsible for teaching prescription writing 58 of 146 do not hold a medical degree, and of the 88 who are M.D.'s only 43 have practiced medicine. How can these appreciate the importance of simplicity combined with correctness in constructing prescriptions to the doctor who sees many patients a day and whose livelihood depends on his success in treating them? Besides pharmacology, prescription writing involves a knowledge of flavors, vehicles and ointment bases, and to a research pharmacologist these are boring details. These might say that teaching prescriptions is something thrust upon them. There is no glory or intellectual stimulation in teaching prescription writing.

Clinical Teachers: As Dr. Kretschmer intimates, these give no time to intensive study of treatment. How often the hospital therapeutics is left largely to the interns! There is certainly no effort made by clinical teachers to teach the student how to write prescriptions, perhaps at times because they have little confidence in their own prescription writing technic.

Pharmacist Teachers: These invariably, I find, recommend complex mixtures for everything, whereas what should be taught the student is the simplest way of prescribing for what he wants. If, of any given drug, capsules or tablets are satisfactory, there is no need to learn how to make up this drug in a liquid form with added syrups, elixirs or flavored solvents. Pharmacists also dwell on incompatibilities, which are really matters of minor import.

Pharmacist Physicians: In my experience the one who writes the best prescription is the man who has graduated in pharmacy and is now a practicing physician.

It would seem as if prescription writing should be taught only when the student is learning clinical medicine and therapeutics, and that means the third or fourth year of his medical course. If taught in the pharmacology course the student does not perceive its practical value, and he is still several years from practicing medicine. Thus, as he passes through the hands of his clinical teachers and subsequently in the hospital prescribes by the use of formulary numbers, he may readily unlearn what he has been taught.

The answer is that the American Medical Association must publish a brochure on prescription writing, not full of rules but merely listing each drug and showing how to prescribe it. It could well be a companion to Useful Drugs and might be used not merely by the practitioner but also in the courses on prescription writing.

At a meeting of the deans of a certain noted university, the medical dean, who had abolished the department of therapeutics, was asked "If you do not teach therapeutics in your school how are your graduates going to prescribe for sick people?" He replied "Oh, they pick that up in a year or two." The inquirer said "Yes, they pick it up from the detail men." In my consultations in towns adjoining New York a common query of the local physician is "Why don't you teach more therapeutics in your medical school?"

NOTE.—The first illustration by Dr. Kretschmer is unfortunate. I should say that a powerful remedy like tincture of nux vomica should never be prescribed by itself. It involves the use of "drops" as dosage, and these vary greatly in size and should not be employed as a dose measure. I saw a woman with typical strychnine poisoning brought on by two or three doses from a bottle of tincture of nux vomica which had become concentrated because the cork had fallen out.

WALTER A. BASTEDO, M.D., New York.

"THE TEACHING OF DRUG THERAPY"

To the Editor:—The article by Dr. H. L. Kretschmer on "The Teaching of Drug Therapy" (THE JOURNAL, June 3, p. 326) calls attention again to the fact that the old problem of teaching prescription writing is by no means settled. Of course it is true that pharmacology is the basis for therapeutics, but pharmacology may also be applied to the diagnosis and prevention of disease as well as to the cure of disease and the alleviation of the symptoms of disease.

Pharmacology as a science is the study of the action of chemicals on living things. It is largely a matter of tradition that prescription writing is taught as part of the course in pharmacology. This is unfortunate in many ways. It puts the teacher of pharmacology to a considerable disadvantage, since he rarely has the opportunity for supervising practice in prescription writing on patients.

It would seem that the principles of prescription writing might be taught didactically as part of pharmacology, with practice prescriptions offered regularly through the course in pharmacology in connection with the drugs being studied. Actual practice in prescription writing, however, would seem to be properly a part of clinical medicine. The place to learn how to write prescriptions is at the bedside of the patient under the guidance of a competent clinician.

It is imperative that during instruction in pharmacology full opportunity be taken to acquaint the student with the purposes of the Pharmacopeia and the objectives of the Council on Pharmacy and Chemistry of the American Medical Association, so as to reduce to a minimum the exploitation of the physician's ignorance of drugs by detail men and pharmaceutical houses. On the other hand, it is equally necessary that clinicians maintain a scientific interest in drugs and that they attempt to use them in a scientific manner. It is wise for clinical instructors to use the United States Pharmacopeia and the National Formulary as well as New and Nonofficial Remedies in connection with their teaching efforts in therapeutics. It is also wise for the teaching hospital to devise a guide to prescription writing and an index of "useful drugs." This index might be utilized as an inventory for the drug room of the hospital. If a competent hospital committee should prepare such a hospital formulary, it might result in keeping out of the hospital wards unsatisfactory proprietary drugs. Such a formulary might also help the clinical staff to give effective teaching in practical prescription writing.

It is the responsibility of the pharmacologist to teach how chemicals act on living things and how this knowledge may be utilized in medicine. It is also the responsibility of the pharmacologist to give instruction in the kind of drugs to use and how to prescribe them. However, it is the responsibility of the clinician to supervise practical training in prescription writing.

CHAUNCEY D. LEAKE, PH.D., Galveston, Texas.
Dean, University of Texas School of Medicine.

MEDICAL PARASITOLOGY AND AND ZOOLOGY

To the Editor:—The recent review of my textbook Medical Parasitology and Zoology in THE JOURNAL, April 8, page 1091, challenges a reply. In paragraph 3 the completeness of the glossary is questioned by the reviewer, who evidently overlooked the needs of the student for such aid in an elementary textbook of this subject. For a similar reason subdivision of the bibliography into that derived from the text and that available generally was deemed quite desirable and helpful to users of the volume.

The allegations of "inaccuracies or inconsistencies of thought or statement" in paragraph 4 of the review are misleading: 1. Craig (1934, p. 132) in describing amebic dysentery mentions repeatedly the presence of blood and mucus in the stools of patients. On page 25 of my textbook I have referred to this condition as a "bloody mucoid diarrhea" for sake of brevity in order to emphasize the contrast between this and the more inclusive condition implied by the term amebiasis. 2 and 3. Chiniofon, anayodin and yatren are not considered as different agents, as the context plainly shows: "It (emetine) should be followed by amebicidal drugs such as the halogen quinoline derivatives—chiniofon, anayodin, yatren, and vioform or carbarsone (an arsenical)." Criticism of the manner in which the administration of these drugs is expressed seems almost too trivial to be worthy of notice. 4. Diodoquin, it is true, should have been mentioned, although it has not yet been widely accepted. Emetine bismuth iodide, however, had been for some years a popular amebicide in Great Britain, but its merits have not been so well recognized here. 5 and 6. Surely the reviewer does not mean to ignore the probable role of exoinfestation in transmission of Enterobius vermicularis as correctly depicted in figure 31 (p. 139) nor object seriously to classifying Echinococcus granulosus and Hymenolepis nana as food infesting worms (pp. 201, 206; figs. 54, 56). In case of E. granulosus the reviewer evidently would overlook entirely the importance of certain domestic animals in perpetuating and transmitting this species. Associations of the common roundworms in general with soil pollution and flatworms with food infestations or infection is sufficiently accurate to justify their employment pedagogically. Since the life cycle constitutes a basic groundwork for each parasitic worm studied, introducing the idea of environmental relationships at the beginning has distinct advantages. Such a method coordinated with analogous groupings and simplications in descriptions has been found to assist the student greatly in comprehending the essential features of the principal worms considered. These points seem to be overlooked by most authors of textbooks on parasitology. 7. Sporadic typhus, as described by Brill, has generally been considered murine in origin, although opinions differ as to its exact etiologic relationships.

Now regarding paragraphs 5, 6 and 7 of this review, the critic adds more unimportant remarks and indulges somewhat in generalities. In paragraph 5 he frowns on use of the title Taenias saginata and solium as a caption covering a brief, combined discussion of these closely related flatworms; he objects to the use of the umlaut u in Wüchereria, although it is so employed in various editions of Manson's Tropical Diseases; he condemns in one statement part III on arthropods and disease without citing one specific instance. He does pause long enough, however, to praise the new color plate (fig. 22) on malaria parasites.

In paragraph 8 the reviewer admits the unquestioned value of Medical Parasitology and Zoology but at the same time offers the dubious advice of supplying the student with a series of mimeographed sheets pointing out the more "serious" errors.

RALPH W. NAUSS, M.D., DR.P.H., New York.

[The letter was sent to the reviewer, who replies:]

To the Editor:—I do not believe that it will be helpful or necessary to consider item by item the points which Dr. Nauss refers to in his letter. I checked all of the points carefully before writing the review and then revised so that there could be no possibility of error in statements included in the review. One of the unfortunate tendencies today in medical writing, perhaps borrowed from newspapers which print only partial truths, is to consider that numerous minor inaccuracies are of little or no consequence. I believe the medical writer owes his physician-reader and medical student the most accurate information available, also the most up to date information. It is on the basis of this thesis that my review was written.

Although I did not make specific statements to this effect, I was much concerned about the recommendations which Dr. Nauss made on the treatment of certain infections considered, since I recognized that he was leaning heavily on Manson-Bahr and was not keeping up with the best American trends. Likewise I did not specifically criticize the numerous diagrammatic illustrations borrowed from Dr. Pedro Kourí, although in 2 or 3 instances I referred to their inaccuracies. A pictorial diagram is one of the best methods of presenting a life cycle of a pathogen and its epidemiology. By the same token, as the diagram is inaccurate the information presented is considerably more damaging than if it had been presented in words.

I realize that Dr. Nauss was sincere in his attempt to provide a useful textbook for medical students. I know that he spent several years in getting the material together. During this period some of the points which I criticized were modified by new knowledge. In other instances Dr. Nauss had failed to understand the need for accurate nomenclature.

INTRAUTERINE PASTES

To the Editor:—The article by Dr. R. W. Weilerstein in THE JOURNAL, May 20, reminds me of a fatal case that occurred forty-eight hours after the intrauterine application of an "interruptin" paste containing iodine and fatty substances. I had the chance to perform the medicolegal autopsy of this case together with Dr. Karl Reuter in Breslau (Germany) on July 29, 1931. A brief account of the findings is given by Reuter in the *Medizinische Klinik* **28**:1339 (Sept. 23) 1932. The intrauterine application of the paste was made by a physician for interruption of an early pregnancy in a woman 25 years old who had threatened to commit suicide in a stage of reactive depression. The ovum with the placenta was expelled but then a severe dyspnea developed which made the transfer to a general hospital necessary. She died forty-eight hours after the "treatment" had started, with the signs of edema of the lungs. The gross necropsy findings were not striking. There were a few subconjunctival and subendocardial ecchymoses and a severe edema of both lungs. The lungs were heavy, the weight of the left 670 Gm. and of the right 700 Gm. The uterus contained a number of blood clots but no remnants of fetal tissue, and the endometrium did not show any signs of necrosis. In the right ovary there was a corpus luteum verum gravitatis. The microscopic examination revealed as the cause of death an extensive fat embolism of the lungs. All capillaries of the lungs were filled with fat emboli, causing obstruction of the pulmonary circulation. The fat had even passed into the general circulation, where fat emboli were found in all organs, especially the liver, kidneys, thyroid and brain. This fact was interesting because the foramen ovale was closed. The paste had dissolved in the uterus and the fat had penetrated into the uterine capillaries and veins, where it was found at the microscopic examination of the uterus wall; then it had passed into the right heart, the pulmonary arteries and capillaries, obstructing their lumen.

GEORGE STRASSMANN, M.D., Waltham, Mass.
Pathologist, Metropolitan State Hospital.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, June 24, page 593.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Various centers, Oct. 16. Candidates in military service may take examination at their place of duty. Final date for filing application is August 15. Asst. Sec., Dr. W. A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Oct. 5-7. Sec., Dr. S. Judd Beach, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written. Part I.* Chicago, Oct. 13-14. New Orleans, Sept. 29-30. New York, Oct. 6-7. San Francisco, Oct. 20-21. Final date for filing application is August 1. Sec., Dr. G. A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 4-7. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 22. *Oral.* St. Louis, Nov. 8-9, New York, Dec. 15-16. Final date for filing application is Aug. 15. Sec., Dr. C. A. Aldrich, 115½ First Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written.* Part I. Various centers, October 25. Final date for filing application is August 15. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Necessity for Expert Testimony as to Physicians' Alleged Negligence.—Hull was seriously injured Sept. 12, 1940 by an explosion in a powder plant that killed over fifty persons and injured many more. He was taken to Dover (New Jersey) Hospital where he was attended by the defendant physician Costello. The defendant physician Plume from time to time took roentgenograms of the patient and on occasion "saw" the patient and consulted with other physicians concerning his condition. On the patient's admission to the hospital the following diagnosis was made: "general lacerations, particularly a severe laceration of the back in the lumbar area, probable injury to spinal cord and nerve system, as evidenced by diminished sensation and paralysis in both legs, shock, and poor general condition, with a very poor prognosis for continuance of life beyond six months." Subsequent diagnosis following the taking of roentgenograms was "fractures of the vertebrae with a displacement of one of the lumbar vertebra, and it showed a foreign body in the boy's back." Apparently, however, there were a number of foreign substances in the patient's body. Dr. Reading, who was called into consultation by the family on Jan. 17, 1941 found that "a prognosis in this case under any circumstances, as far as life is concerned, appears poor." The patient died March 14, 1941, within two days of the six months originally predicted as the probable maximum of life. Subsequently the patient's father, as administrator of his estate, instituted an action against the defendant physicians Costello and Plume, claiming that the death of the patient notwithstanding the serious nature of the injuries received in the explosion was actually caused as the result of the negligent treatment rendered by the defendants. At the conclusion of the evidence presented by the administrator, the trial court directed a verdict in favor of the physicians "because there was no professional or expert testimony upon the question of negligence." The administrator then appealed to the Court of Errors and Appeals of New Jersey.

The crucial question in this case, said the court, is whether the defendant physicians were negligent in the treatment administered, and, if negligent at all, whether such negligence had any causal relation to the patient's death. The administrator contended that while as a general rule those questions could only be determined on the basis of the testimony of medical expert witnesses "where the acts of the defendant physicians are so manifestly and clearly negligent and improper that they can be recognized as such by the ordinary layman, no expert medical testimony is required." The court, however, did not believe that that exception to the general rule was applicable to the present case. The alleged negligence of the physicians, according to the administrator, consisted of

> leaving a large piece of metal in a soiled contused wound for four months and then removing it, and in failing to remove soiled and infectious tissue from the edge of a wound of the size and appearance of the one in question; and in failing to investigate or remedy the presence of urine in an open wound, the same being infectious, the transfusion of blood on only six occasions in four months, on only nine occasions in six months when the treatment required was repeated transfusions, and that infection of the blood stream was permitted to develop.

The testimony, said the court, in this case discloses that the defendant physicians were handling a serious and complicated case of multiple injuries. The patient was in extreme shock, resistance was low, bodily strength was at an ebb most of the time, disturbance by operation or manipulation a risky procedure, and the extreme severity of the initial injuries from the beginning was such that physicians recognized ultimate recovery as probably hopeless and that life itself could scarcely last beyond a few months. In a state of facts of this character, we believe that it was not within the province of any jury to adjudge the validity of the judgment and action of the attending physicians as to the course of their treatment without at least the aid of experts qualified as to knowledge in a field outside the knowledge and experience of laymen, and informed of the actual circumstances of the case in question on which they might deliver their opinion on the basis of either their actual knowledge or assumed facts in a hypothetical question based on the testimony in the case. The court accordingly concluded that the ruling of the trial court as to the necessity for expert testimony was correct.

The administrator contended, however, that if expert testimony as to the negligence of the defendant physicians is essential he had been deprived of an opportunity to present such testimony by the action of the trial court in refusing to permit him to propound questions to Dr. Costello, whom the administrator had called as his own witness, the answers to which would have been evidence as to various forms or hypothetical methods of treatment and would have stated the witness's opinion as to such matters. When the administrator, said the appellate court, sought to propound questions to Dr. Costello which called for answers outside the realm of pure fact, that is, what the physician actually saw and did, and endeavored to elicit from him information as to various forms or hypothetical methods of treatment and to obtain directly his own opinion as to such matters, the administrator was then invading the realm of expert knowledge and opinion in attempting to make of the witness not a mere relator of facts but an expert witness on behalf of the plaintiff. Objections were made to questions called for expert response and we believe were correctly sustained. The applicable statute (R. S. 2:97-12, N. J. S. A.) permits the examination of an adverse party as a witness but provides that, "except as otherwise provided by law, when any party is called as a witness by the adverse party he shall be subject to the same rules as to examination and cross examination as other witnesses." One of the established rules in this state, continued the court, as to the examination and cross examination of witnesses is that one may not be called and compelled to give expert testimony unless he shall have voluntarily contracted so to do. *Stanton* v. *Rushmore*, 112 N. J. L. 115, 169 A. 721. There is no authority for excluding the defendant physician in the instant case from the protection of that rule because he is a party to the litigation, nor do we find any intendment of such exclusion in the case just cited.

The judgment of nonsuit was accordingly affirmed.—*Hull v. Plume, 37 A. (2d) 53 (N. J., 1944).*

Society Proceedings

COMING MEETINGS

National Medical Association, St. Louis, Aug. 14-17. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.

Utah State Medical Association, Salt Lake City, August 24-26. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

11:101-140 (April) 1944

An Explanation of Appetite. F. Hoelzel.—p. 101.
Role of Fat Soluble Vitamins A and D in Nutrition. J. Buckstein.—p. 109.
Autonomic Pharmacology and Therapeutics of Gastrointestinal Tract. L. Pelner.—p. 116.
Peptic Ulcer—Suggesting Malnutrition as Etiology. Elizabeth Steele.—p. 119.
*Study of 127 Cases of Arthritis (With Notes on Gastrointestinal Features). J. A. Turnbull.—p. 122.

Arthritis and Gastrointestinal Factors.—Turnbull reviews observations on 127 patients with arthritis, of whom 98 were women and 29 were men. He evaluates the length of time they had suffered from arthritis, age at which arthritis was first manifested and occupation in its possible relation to the etiology of arthritis. Arthritis attacks the finger joints most often; the vertebral joints are least often affected; 37 patients were attacked in all joints. Joints protected by clothing do not appear to enjoy special immunity. A joint previously traumatized will be more severely involved in a general arthritis. A family history of arthritis was obtained in 29.1 per cent of the cases. Etiologic factors of arthritis suggested by this study are food allergy, focal and systemic infection, constipation, gastrointestinal disturbances, trauma, nervous shock, fatigue and exposure. Allied diseases known to be due to protein anaphylaxis are considered in their relation to the occurrence of arthritis. The popular connection between wet weather and arthritis is possibly due to observation of the effects of circulatory disturbances. The cutaneous tests for protein sensitization permit the selection of a diet which in most cases will relieve an arthritic patient of all or the greater part of his symptoms. This therapy is so simple and so readily carried out, requiring nothing more than a little self denial on the patient's part, that it deserves a trial in every case presenting arthritic symptoms.

American Journal of Hygiene, Baltimore

39:129-268 (March) 1944

Studies on Artificial Immunization of Mice Against Infection with Dwarf Tapeworm, Hymenolepis Nana Var. Fraterna. J. B. Larsh Jr.—p. 129.
Relation Between Splenectomy and Resistance of Old Mice to Infection with Hymenolepis Nana Var. Fraterna. J. E. Larsh Jr.—p. 133.
Epidemiology of Human Intestinal Parasite Infections in State Hospital of Indiana. W. B. Hopp.—p. 138.
Influence of Vitamins B_1 (Thiamine) and B_2 (Riboflavin) on Resistance of Rats to Infection with Nippostrongylus Muris. J. Y. C. Watt.—p. 145.
Loaiasis and Onchocerciasis: New Antigen for Their Diagnosis by Skin Test. J. T. Culbertson, H. M. Rose and Constance R. Demarest.—p. 152.
Filariasis Bancrofti: Its Diagnosis by Immunological Tests with Antigen Derived from Litomosoides Carinii. J. T. Culbertson, H. M. Rose and Constance R. Demarest.—p. 156.
Use of Insecticides on Men Artificially Infested with Body Lice. W. A. Davis and C. M. Wheeler.—p. 163.
*Studies on Louse Control in Civilian Population. W. A. Davis, F. M. Juvera and P. H. Lira.—p. 177.
Protection Against Endotoxins of Some Gram-Negative Bacteria Conferred by Immunization with Heterologous Organisms. P. A. Zahl and S. H. Hutner.—p. 189.
Primary Atypical Pneumonia, Etiology Unknown (Part II). J. H. Dingle, T. J. Abernethy, G. F. Badger, G. J. Buddingh, A. E. Feller, A. D. Langmuir, J. M. Ruegsegger and W. B. Wood Jr.—p. 197.

Louse Control in Civilian Population.—Davis and his associates describe the use of louse killing agents on civilian population in Mexico. The ultimate purpose of the work was to control typhus fever; the immediate aim was to rid an entire town of lice cheaply, rapidly and with a minimum of equipment. The materials used were a lotion which kills both lice and nits in the hair and powders developed to kill lice in the clothes. The program included these steps: obtaining the cooperation of the people to be treated, mapping of every house in the town, taking a complete census of the town, examining the head and clothing of every person, giving two treatments in successive weeks and evaluating the results a month later. The program was developed in five small Mexican villages. In one of these typhus was epidemic and 64 per cent of the population had body lice. Following treatment, the epidemic stopped and the number of persons with lice approached zero in the second week. A month after the beginning of treatment, only 7 per cent of the population had lice.

American Journal of Surgery, New York

64:1-148 (April) 1944

Genital Fistulas in Women: Life of J. M. Sims and History of Vesicovaginal Fistula—Management of Rectovaginal Fistulas and Complete Tears of Perineum. L. E. Phaneuf.—p. 3.
Use of Carbolic Acid (Phenol) in Treatment of Bartholinian Abscess. G. W. Phelan.—p. 28.
Continuous Caudal Anesthesia in Obstetrics. W. Levine, J. Herzlich, J. Halperin and H. Taller.—p. 31.
Culdoscopy: New Method in Diagnosis of Pelvic Disease—Preliminary Report. A. Decker and T. H. Cherry.—p. 40.
*Pelvic Reactions to Infections: Study of 493 Operative Cases. C. W. Barrett and A. F. Lash.—p. 45.
*Topical Application of Horse Serum in Treatment of Extensive Burns. H. M. Rabinowitz and L. Pelner.—p. 55.
Exophthalmos: Diagnosis and Surgical Treatment of Intractable Cases. J. L. Poppen.—p. 64.
*Gangrene of Finger Following Digital Nerve Block: Report of 8 Cases with Discussion of Gangrene Pathogenesis. E. E. O'Neil and J. J. Byrne.—p. 80.
Changing Concepts of Inguinal Hernia. H. E. Stein.—p. 88.
Acute Nonspecific Mesenteric Adenitis. W. E. King.—p. 92.
Aseptic Resection and Anastomosis of Small Intestine. H. P. Totten.—p. 95.
Pilonidal Sinus or Cyst—Misnomer. J. L. Magrath.—p. 101.
Restoration of Facial Contour in Surgery of Secondary Cleft Lip and Palate. A. D. Davis and G. A. Selleck.—p. 104.
Compression Fractures of Lumbar Vertebra Without Cord Involvement. F. S. Mainzer.—p. 115.
Allergic Phenomena in Relation to Abdominal Wound Evisceration: Case Reports and Experimental Work. M. G. Henry.—p. 118.
Circumcision Dressing. B. G. Clarke.—p. 129.

Pelvic Reactions to Infections.—Barrett and Lash review observations on 493 patients with partially arrested pelvic infections who were operated on at the Cook County Hospital Clinic. Most reactions to infections overcame the infection, but the reactions left adhesions, thickened tissues, masses large and small, which produced pain and interfered with the function of organs, and were often the site of returning activity by reason of dormant foci or reinfections, so that, in the interest of health, operation became necessary. The etiologic factors were gonococci, abortions and the puerperium. Nulliparas predominated, and 78.7 per cent of the women were below 30 years of age. Surgical treatment was considered only when infection had produced permanent changes in the pelvic structures. In the choice of operation there was a distinct leaning toward conservatism. The important steps in surgical treatment are proper preparation of the patient, proper election of time of operation and rational conservation of tissue. Though gonococci may be common primary and secondary invaders, pyogenic organisms assume the chief role in destroying the female pelvic organs. In these conditions methods of treatment other than surgical are at best only palliative. As the pyogenic organisms, especially streptococci, are commonly found in the tissues, due time must elapse between the last acute exacerbation and the operation to allow immunization of the patient. Though the dormant bacteria were found to be virulent, they were avirulent in the presence of the active antibodies of the patient. The best guides for determining the proper time to operate are temperature, leukocyte curve and the degree of tenderness in the lower part of the abdomen. The foregoing principles were adhered to in the described series of patients and the mortality was only 1.42 per cent, which corresponds to the mortality reported in the literature. The low mortality was largely due to their method of dealing with conglomerated masses, which they outline in this paper.

Topical Application of Horse Serum in Burns.—Rabinowitz and Pelner say that for nearly fifteen years they have employed topical application of normal horse serum to severe burns. They had deduced that local application of horse serum tended to act as a physiologic plug to excessive plasma loss in addition to the healing and bactericidal properties of serum and plasma. After treatment of the burn shock with transfusions, the readily accessible blebs are broken with sterile scissors. The burn is not washed unless it is grossly contaminated, and no débridement is done. The burn is sprayed with normal horse serum, at first every hour and later at longer intervals. A small heat lamp is played over the area until the serum and plasma are coagulated. After about ten days to two weeks the burned part is soaked in sterile saline solution and, as the eschar separates, spraying and saline washings are repeated until complete epithelization takes place. Fifty-two patients with burns of second and third degree were treated in this manner. Eight patients in whom more than 75 per cent of the body surface was involved died within a few hours. In the recoveries the rate and extent of healing seemed remarkably fast. The absence of infection and pain was noteworthy. The healed burns exhibited little or no scarring, and contractures commonly due to burns were not in evidence. In only 1 case was there evidence of mild serum sickness. No skin grafting had to be done on any of these patients. Comparative experiments on animals likewise proved the superiority of the horse serum treatment over treatment with tannic acid and silver nitrate. The authors discuss the role of the protein degradation products cystine, cysteine and methionine in the process of plasma coagulation in burned areas.

Gangrene of Finger Following Digital Nerve Block.—O'Neil and Byrne point out that gangrene occasionally follows digital nerve block. They report 8 cases to illustrate that this complication is not so infrequent as the perusal of the literature would indicate. The injected solution may interfere with the digital circulation and produce gangrene if too much solution is used, if epinephrine is present in the solution or if tourniquets are used. If damage to the circulation is not sufficient in itself to produce the gangrene, subsequent soaking of the finger in hot or even warm water may hasten devitalization of the tissue. Digital nerve-block should be replaced, whenever possible, by general anesthesia consisting of pentothal, gas-oxygen or ether. If it becomes necessary to use a local anesthetic great care should be taken in performing the nerve block. No tourniquet nor solution containing epinephrine should be used. Only a small quantity of solution should be used, from about 1 to 1.5 cc. for the entire block. Soaks are contraindicated for at least twenty-four hours.

American Journal of Tropical Medicine, Baltimore

24:55-156 (March) 1944. **Partial Index**

Typhus Fever: Note on Severity of Disease Among Unvaccinated and Vaccinated Laboratory Personnel at National Institute of Health. N. H. Topping.—p. 57.
Susceptibility of Marmosets to Different Strains of Yellow Fever Virus. H. W. Laemmert Jr.—p. 71.
Saimiri Monkey as Experimental Host for Virus of Yellow Fever. M. Bates.—p. 83.
Experiments with Virus of Yellow Fever in Marsupials, with Special Reference to Brown and Grey Masked Opossums. M. Bates.—p. 91.
Anopheles of Panama, with Special Reference to Hand Lens Identification and Notes on Collecting and Care of Specimens. C. P. Baxter and J. Zetek.—p. 105.
Role of Reservoir Host in Tropical Disease. E. H. Hudson.—p. 125.
*Feeding Habits of Proven and Possible Mosquito Vectors of Western Equine and St. Louis Encephalitis in Yakima Valley, Washington. W. C. Reeves and W. McD. Hammon.—p. 131.
Acute Dysentery Produced by Shigella Alkalescens: Report of Case with Necropsy. R. H. Rigdon, I. D. Michelson and F. Allen—p. 135.
Malaria Thick Films Contaminated with Excretions of Flies Containing Flagellates (Herpetomonas). A. A. Packchanian.—p. 141.

Feeding Habits of Mosquito Vectors of Encephalitis.—Reeves and Hammon state that as part of an epidemiologic study of the mosquito vectors of encephalitis in the Yakima Valley, Washington, a large series of blood engorged specimens, collected in domestic habitats, were tested by means of the precipitin method to determine the relative proportions which fed on domestic animal reservoirs of these infections and on man. Hand collections were made on the horse, cow and man to determine which of the various mosquito species fed on these hosts. It was found that Culex tarsalis, the species best fitting the epidemiologic picture as a mosquito vector of encephalitis in the Yakima Valley, fed frequently on domestic fowl and included most of the common domestic animals and man in its feeding range. The feeding habits of this species alone could result in the incidence of encephalitis antibodies demonstrated in domestic animals and man in the Yakima Valley. The results of the precipitin tests, and the repeated isolations of virus from Culex tarsalis, give strong support to the probability that domestic fowl are an important reservoir of infection in the Yakima Valley.

Annals of Surgery, Philadelphia

119:289-480 (March) 1944

Psychosomatic Surgery. B. Brooks.—p. 289.
Indications For and Experiences With Total Gastrectomy, Based on 71 Cases of Total Gastrectomy. F. H. Lahey and S. F. Marshall.—p. 300.
Acute Perforation in Gastroduodenal Ulceration: With Special Reference to End Results. W. L. Estes Jr. and B. A. Bennett Jr.—p. 321.
Carcinoma of Duodenum: Report of 2 Cases in Suprapapillary Portion. I. Cohn.—p. 342.
Congenital Pyloric Stenosis. C. A. Vance.—p. 351.
Neurofibroma of Small Intestine: Report of Case. J. D. Collins.—p. 362.
Massive Resection of Small Intestine: Report of 2 Cases. W. H. Prioleau.—p. 372.
Simple Penetrating Ulcer of Cecum. C. Rosser.—p. 377.
Surgical Indications in Diseases of Common Bile Duct. R. L. Sanders.—p. 384.
Cholesterolosis: Its Significance in Badly Damaged Gallbladder. N. A. Womack and H. Haffner.—p. 391.
Combined Vascular and Nerve Injuries of Warfare. D. C. Elkin and B. Woodhall.—p. 411.
Control of Pain in Posttraumatic and Other Vascular Disturbances: Role of Sympathetic Nervous System in Treatment of Peripheral Vascular Diseases. H. Mahorner.—p. 432.
Surgical Treatment of Experimental Coarctation (Atresia) of Aorta. A. Blalock and E. A. Park.—p. 445.
Ligation of Abdominal Aorta for Aneurysm: Complicated by Rupture into Retroperitoneal Space. J. J. Morton and W. J. M. Scott.—p. 457.
Technical Simplicity of Matas Endoaneurysmorrhaphy. I. M. Gage.—p. 468.

Archives of Dermatology and Syphilology, Chicago

49:227-304 (April) 1944

Bechet's Syndrome with Involvement of Central Nervous System: Report of Case, with Necropsy, of Lesions of Mouth, Genitalia and Eyes; Review of Literature. C. Berlin.—p. 227.
Colloid Degeneration of Skin: Report of 3 Cases from Australia. E. A. Hand.—p. 234.
*Dermatitis Venenata and Keratoconjunctivitis Caused by Manzanillo Tree. J. S. Snow and R. D. Harley.—p. 236.
Rapid Macroflocculation Test for Syphilis: Method of Rappaport and Eichhorn. E. A. Hewish and M. M. Barritt.—p. 240.
*Successful Inoculations of Animals with Trichophyton Purpureum: Observations on Course of Disease and Immunologic and Histologic Features. F. Reiss.—p. 242.
Misuse of Sulfonamide Compounds. D. Bloom.—p. 249.
Calibration of X-Ray Equipment for Superficial Therapy. C. E. Eddy.—p. 250.
Dermatitis of Eyelids. H. H. Hazen.—p. 253.
Keratoderma Climactericum: Cures with Natural and with Synthetic Estrogen. W. Garbe.—p. 254.
Tuberculin Patch Test and Mantoux Test: Comparative Study in Cases of Various Dermatoses, Including Tuberculodermas. F. Pascher and M. B. Sulzberger.—p. 256.
Tropical Ulcer. O. G. Costa.—p. 260.
Bentonite. H. Goodman.—p. 264.
Dermatitis from Carrots. S. M. Peck, L. W. Spolyar and H. S. Mason.—p. 266.
Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi in Full Blooded Negro. B. P. Persky and J. R. Lisa.—p. 270.
Acrodermatitis Continua (Hallopeau): Effect of Treatment with Sulfapyridine. W. F. Lever.—p. 273.
Keloids as Sequel to Varicella. E. F. Traub.—p. 278.

Dermatitis Venenata and Keratoconjunctivitis Caused by Manzanillo Tree.—Snow and Harley direct attention to the lesions of the skin and eye produced by contact with the manzanillo or beach apple tree, which is found along the beaches throughout the Caribbean area and resembles the North American crabapple. During the past two years 18 patients with manzanillo dermatitis have been admitted to Gorgas Hospital. The clinical appearance was similar to that produced by Rhus toxicodendron. The patients could recall recent contact with the tree when it was described to them. An acute dermatitis venenata soon appeared over the exposed areas, consisting of bright erythema, edema and vesiculation. Large blisters and even bullae an inch (2.5 cm.) in diameter were present in the severe eruptions. The areas most frequently involved were the

face, hands, forearms, upper part of the trunk and genitalia. The manzanillo dermatitis responded to bland, soothing therapy. Cool compresses of solution of boric acid to the face gave relief. For the generalized lesions, especially when there was involvement of the genitalia, cool starch and soda tub baths were helpful. Calamine lotion N. F. with 1 per cent phenol and zinc oxide ointment U. S. P. were used freely. The lesions usually cleared in five to ten days. The eyes were involved in 4 cases. These patients were brought into the hospital with both eyes tightly closed, lacrimating profusely and in pain. There were erythema and edema of the eyelids and vesiculation on the delicate skin about the eyes. Blepharospasm was so great that it was almost impossible to force the lids apart until an anesthetic solution had been applied. Fluorescein stain showed that the corneal epithelium was denuded. Treatment of the keratoconjunctivitis was directed toward preventing infection and waiting for the corneas to reepithelize. To relieve pain a 0.5 per cent solution of tetracaine hydrochloride or an ointment containing tetracaine base was effective. When the spasm of the lid muscles was relieved sufficiently to allow the lids to be separated, the conjunctival sacs were irrigated with copious quantities of isotonic solution of sodium chloride. Effective prophylactic measures are (1) prompt immersion in sea water, preferably with the eyes open, and (2) thorough washing of the entire body with soap and water.

Inoculation of Animals with Trichophyton Purpureum.—Reiss inoculated rabbits with cultures of Trichophyton purpureum grown on a 4 per cent dextrose agar medium for from two to three weeks at room temperature. Two strains of organisms were used: (*a*) a granular strain, which was cultured from a patient with chronic onychomycosis, and (*b*) a fluffy strain, which was isolated from a patient with chronic disseminated dermatophytosis and follicular involvement of the beard as well as invasion of the skin of the feet, buttocks and scalp. The experiments were done on three series of animals: (1) untreated rabbits (control), (2) rabbits exposed to roentgen irradiation of the spleen and (3) castrated rabbits. Castrated rabbits exhibited the greatest response to the infection, whereas rabbits whose spleen had been exposed to roentgen rays showed a less active infection than the castrated animals. One rabbit inoculated with the cutaneous and intracutaneous methods simultaneously showed traces of infection nine months after the last inoculation. All other control rabbits treated with the cutaneous method alone exhibited a spontaneous cure after six to eight weeks. The clinical features of the infection in rabbits resemble those of the infection in human beings. An allergic reaction could not be elicited by intracutaneous injections of trichophytin. Susceptibility to infection with T. purpureum is increased by irradiation and by castration. Fungi were not found in direct examinations of hair from the infected areas. In one section of a cutaneous biopsy only one infected hair follicle was found. This behavior of the fungus in animals is comparable with its behavior in human subjects, in whom the fungus is regularly found in the scales and not in the hair.

Bulletin of Johns Hopkins Hospital, Baltimore

74:161-228 (March) 1944

*Effect of Hemoglobin and Related Pigments on Renal Functions of Normal and Acidotic Dog. R. J. Bing.—p. 161.
Acute Diffuse Interstitial Fibrosis of Lungs. L. Hamman and A. R. Rich.—p. 177.
Granuloma Inguinale as Cause of Arthritis and Osteomyelitis: Report of Case. R. B. Scott, J. Lyford III and R. W. Johnson Jr.—p. 213.

Effect of Hemoglobin and Related Pigments on Renal Functions.—The effect of hemoglobin and related pigments on renal function has recently attracted interest owing to the frequency with which anuria was observed after the excretion of myoglobin following crush injuries and during methemoglobinuria accompanying blackwater fever. Acidosis appears to be an important factor in the production of renal lesions in these conditions. Bing investigated the effect of acidosis alone, of acidosis combined with action of hemoglobin, methemoglobin and myoglobin on renal function and compared the information obtained through clearance studies with the pathologic lesions found in the kidney of animals injected with these substances. Intravenous infusion of crystalline methemoglobin into dogs rendered acidotic with ammonium chloride is followed by a fall in the effective renal plasma flow, glomerular filtration rate and the tubular reabsorptive capacity for glucose. The renal lesion in acidotic dogs infused with methemoglobin consists of hydropic degeneration of the proximal convoluted tubules, cellular necroses in the distal segment and plugging of the collecting tubules with hyaline and in some instances with pigmented casts. Dilatation of the collecting tubules and glomerular damage are absent. Infusions of myoglobin and of hemoglobin into acidotic animals and of methemoglobin and hemoglobin into normal animals fail to produce renal failure. The intravenous infusion of lactic acid and of hydrochloric acid produces a rapid fall in clearances caused by the urinary excretion of methemoglobin. Acidosis produced by oral administration of ammonium chloride has no effect on the renal function.

Cancer Research, Baltimore

4:209-272 (April) 1944. **Partial Index**

Spectrographic Analysis of Carcinogenic Hydrocarbons and Metabolites. R. N. Jones, C. E. Dunlap and C. J. Gogek.—p. 209.
Studies in Selective Differentiation of Tissues by Means of Filtered Ultraviolet Light. L. Herly.—p. 227.
Chromosome Complexity in Regenerating Rat Liver. J. J. Biesele.—p. 232.
Mitotic Incidence in First Forty-Eight Hours of Methylcholanthrene Epidermal Carcinogenesis. Helen C. Reller and Zola K. Cooper.—p. 236.
Multiple Constitution of Abnormal Ciliates Produced by Blastomatogenic Agents. J. C. Mottram.—p. 241.
Ascorbic Acid Content of Liver in Mice. E. L. Kennaway, N. M. Kennaway and F. L. Warren.—p. 245.
Effects of Low Lysine Diet on Growth of Spontaneous Mammary Tumors in Mice and on N_2 Balance in Man. R. A. Kocher.—p. 251.
Characterization of Influence Affecting Growth of Transplantable Leukemias in Mice. L. W. Law.—p. 257.

Georgia Medical Association Journal, Atlanta

33:61-88 (March) 1944

Complications of Coronary Thrombosis. C. C. Maher.—p. 61.
Malignant Lymphoma. J. Funke.—p. 69.
Fused Kidneys: With Special Reference to Horseshoe Kidneys. S. A. Kirkland.—p. 73.
Primary Atypical Pneumonia of Unknown Cause. M. S. Dougherty Jr.—p. 76.

33:89-130 (April) 1944

Memorial Exercises. W. R. Dancy.—p. 89.
Mycotic Aneurysm: Report of 2 Cases. R. B. Logue and J. F. Hanson.—p. 94.
Study of Basal Metabolic Rates and Associated Conditions in College Group. Marian E. Farbar.—p. 98.

Journal of Experimental Medicine, New York

79:331-462 (April) 1944

Paraaminobenzoic Acid Production by Staphylococci. W. W. Spink, L. D. Wright, J. J. Vivino and Helen R. Skeggs.—p. 331.
Immunologic Relationships Among Central Nervous System Viruses. J. Casals.—p. 341.
Interference Between the Influenza Viruses: I. Effect of Active Virus on Multiplication of Influenza Viruses in Chick Embryo. J. E. Ziegler Jr. and F. L. Horsfall Jr.—p. 361.
Id: II. Effect of Virus Rendered Noninfective by Ultraviolet Radiation on Multiplication of Influenza Viruses in Chick Embryo. J. E. Ziegler Jr., G. I. Lavin and F. L. Horsfall Jr.—p. 379.
Duration of Immunity to Plasmodium Knowlesi Malaria in Rhesus Monkeys. J. Maier and L. T. Coggeshall.—p. 401.
*Therapeutic Effectiveness of Penicillin in Experimental Murine Typhus Infection in dba Mice. V. Moragues, H. Pinkerton and D. Greiff.—p. 431.
Blood Sucking Vectors of Encephalitis: Experimental Transmission of St. Louis Encephalitis (Hubbard Strain) to White Swiss Mice by American Dog Tick, Dermacentor Variabilis Say. R. J. Blattner and F. M. Heys.—p. 439.
Studies on Denaturation of Antibody: I. Action of Urea on Diphtheria Antitoxin. G. G. Wright.—p. 455.

Penicillin in Experimental Murine Typhus.—Penicillin was shown to inhibit the growth of murine typhus rickettsias in the yolk sac of the developing hen's egg. Moragues and his associates administered penicillin in large but nontoxic doses to mice injected with murine typhus rickettsias. The treatment resulted in a reduction in mortality, particularly when the initial dose of rickettsias was relatively small, approaching the minimal lethal dose. No evidence of secondary bacterial infection was obtained by bacteriologic and microscopic studies. It appears, therefore, that the greatly increased survival rate in the treated mice was caused by the action of penicillin on typhus rickettsias. No prediction can be made from these experiments concerning the effect of penicillin on human typhus infection. Since the

human disease is caused by the growth of rickettsias in vascular endothelium, intravenous injection of penicillin would bring the drug into direct contact with the cells containing the organisms. If sufficiently high concentration of the drug can be established in the blood stream in the early stages of the disease, it would seem reasonable to expect a beneficial therapeutic effect. The results suggest that treatment in the early stages of illness may be important and that the duration and intensity of treatment should be somewhat increased over that ordinarily used in bacterial infections.

Journal-Lancet, Minneapolis

64:95-132 (April) 1944

War and Postwar Menace. K. Emerson.—p. 95.
Medical Students and Tuberculosis. J. H. Schultz.—p. 96.
Early Diagnosis of Pulmonary Tuberculosis. M. K. Mihran.—p. 97.
Diagnosis and Treatment of Tuberculosis. W. L. Meyer.—p. 100.
Use of Miniature X-Ray Films in Tuberculosis Control. H. L. Hiebert. —p. 101.
Review of 84 Cases of Pleural Fluid. S. G. Clayman.—p. 104.
Failure to Detect All Tuberculosis on Induction to Military Service. J. A. Myers.—p. 111.
History of Practical Chest Roentgen Photography 35 mm. Film Method. D. O. N. Lindberg.—p. 113.
Problems, Opportunities and Obligations Confronting Health Educators. C. E. Lyght.—p. 115.

Journal Neuropath. and Exper. Neurology, Baltimore

3:101-198 (April) 1944

Acute Primary Hemorrhagic Meningoencephalitis. M. S. Margulis, V. D. Soloviev and A. K. Shubladze.—p. 101.
*Anatomic Changes of Motor Nerve Endings in Human Muscles in Early Poliomyelitis. E. J. Carey, L. C. Massopust, W. Zeit and E. Haushalter.—p. 121.
Peculiar Cells and Fibers in Central Nervous System. A. Avtsin.—p. 131.
Experimental Studies on Electro Shock Treatment: Intracerebral Vascular Reaction as Indicator of Path of Current and Threshold of Early Changes within Brain Tissue. L. Alexander and H. Löwenbach.—p. 139.
Pathologic Considerations of Contusion of Cauda Equina. G. B. Hassin. —p. 172.
Effects of Implantation of Methylcholanthrene in Brain of Dog. P. Bailey, K. Shimizu and E. W. Davis.—p. 184.
Human Pyramidal Tract: VIII. Preliminary Investigations of Effect of Hemiplegias on Fiber Components of Pyramids. A. M. Lassek.—p. 189.
Arnold-Chiari Malformation: Method of Presentation. J. A. Wagner. —p. 193.
Anterior Communicating Artery in Man. H. S. Rubinstein.—p. 196.

Motor Nerve Endings in Early Poliomyelitis.—Carey and his associates describe changes that occurred in the muscles of 3 patients with poliomyelitis. All 3 had died as a result of fulminating bulbar poliomyelitis and had paralysis of the intercostals and accessory muscles of respiration. The poliomyelitic muscle changes were studied by the gold method in comparison with muscles from 2 normal controls. Practically complete denervation of the extrafusal muscle fibers at the myoneural junctions of human respiratory muscles (diaphragm, intercostals, sternocleidomastoid and trapezius) occurred within thirty-six hours of the onset of sore throat and elevated temperature in a fulminating case of bulbar poliomyelitis. This anatomic denervation at the myoneural junction was undoubtedly a terminal result of a pathologic change going on during the incubation period. From 36 to 168 hours after the onset of sore throat and elevated temperature microscopic examination pointed to a rapid centripetal extension of the degeneration in the axons originating possibly in the degenerated motor end plates of many nerve trees. The afferent medullated nerves from and efferent nerves to the intrafusal fibers of some sensory muscle spindles appeared to be more resistant to granular degeneration during the early stages of the disease than were the corresponding motor nerves to the extrafusal fibers in the same muscle. The differential effects of the virus of poliomyelitis on sensory muscle spindles and motor end plates may be the anatomic basis within the musculature for the sensory and motor disturbances in voluntary muscles such as pain, tenderness, myotatic reflex rigidity or shortening, asthenia, ataxia due to disturbance of reciprocal innervation, and flaccid paralysis. There was a striking passive hyperemia of the capillaries in some human muscles. Many muscle fibers had a granular and hyaline degeneration which replaced the transverse and longitudinal striations. There was a proliferation of the perivascular reticuloendothelial mesenchyme leading to the differentiation of epithelial-like lipoblasts in human poliomyelitic muscle. These changes were highly irregular with regard to localization and distribution, so that large amounts of teased muscle material must be studied.

Journal of Nutrition, Philadelphia

27:287-354 (April) 1944

Effects on Respiratory Metabolism Produced by Equal Amounts of Caffeine in Form of Coffee, Tea and Pure Alkaloid. J. Haldi, G. Bachmann, C. Ensor and W. Wynn.—p. 287.
Some Observations of Dark Adaptation in Man and Their Bearing on Problem of Human Requirement for Vitamin A. E. L. Batchelder and Jane C. Ebbs.—p. 295.
Study of Neuromuscular Regeneration Under Different Levels of Vitamin C Intakes. H. M. Hines, B. Lazere, J. D. Thomson and C. H. Cretzmeyer.—p. 303.
Response to Intravenous Injection of Ascorbic Acid as Indicated by Urinary Excretion of Total and Reduced Forms. G. H. Berryman, C. E. French, H. A. Harper and H. Pollack.—p. 309.
Survey of Ascorbic Acid Status of College Students. Mary L. Dodds and Florence L. MacLeod.—p. 315.
Maintenance of Adult Rats on Diets Low in Certain B. Vitamins. E. C. Miller and C. A. Baumann.—p. 319.
B Vitamin Content of Groats and Rolled Oats. J. M. Cooperman and C. A. Elvehjem.—p. 329.
Studies of Comparative Nutritive Value of Fats: II. Comparative Composition of Rats Fed Different Diets. H. J. Deuel Jr., Lois F. Hallman, E. Movitt, F. H. Mattson and Esther Wu.—p. 335.
Studies of Comparative Nutritive Value of Fats: III. Effect of Flavor on Food Preference. H. J. Deuel Jr. and E. Movitt.—p. 339.
Studies on Urinary Excretion of Riboflavin. Virginia H. Feder, G. T. Lewis and H. S. Alden.—p. 347.

New England Journal of Medicine, Boston

230:445-476 (April 13) 1944

*Prolonged Disturbances of Consciousness Following Head Injury. B. E. Moore and J. Ruesch.—p. 445.
Meningococcal Meningitis: Report of 33 Cases with No Deaths. R. R. Meyer.—p. 452.
Inhalation Therapy. M. S. Segal.—p. 456.

Prolonged Disturbances of Consciousness Following Head Injury.—The material presented by Moore and Ruesch consists of data obtained from medical, neurologic and psychologic examinations of 39 patients with disturbances of consciousness, such as coma, semicoma, confusion, delirium, stupor, drowsiness and dysphasia lasting longer than seventy-two hours after injury to the head. A high incidence of altered electroencephalogram, skull fracture, bloody spinal fluid under increased pressure and Babinski sign gave evidence that prolonged mental confusion is associated with severe brain damage. Important changes in vital signs were present in only half the cases and appeared to be independent of the presence and duration of confusion. During the period of hospitalization immediately following injury, intellectual disturbances outnumbered other mental abnormalities. Emotional disorders tended to appear later than the cognitive dysfunctions and persisted longer; they were frequent even in cases of short confusion. Ability to speak returned on an average within the first day. The first response to simple psychologic tests appeared during the second week, before correct orientation in place, situation and time, which returned in that order. Drowsiness and restlessness held no fixed place in the order of recovery and appear to be independent of the course of recovery of intellectual function. Gross intellectual defect persisted for six months in 31 per cent of the patients and was preceded in every case by a period of confusion lasting longer than nineteen days. The duration of disorientation proved to be one of the most reliable and easily obtainable criteria of the seriousness of mental prognosis. The total duration of post-traumatic amnesia is directly related to the period of disorientation and thus has equal value but is available only later and is then a purely subjective quantity.

New Orleans Medical and Surgical Journal

96:435-488 (April) 1944

Acute Pericarditis Due to Streptococcus Viridans. M. D. Hargrove. —p. 435.
New and Important Applications of Carbon Tetrachloride in Medical Therapy. G. F. Fasting.—p. 439.
Acute Ventricular Failure. H. E. Rollings.—p. 446.
Symposium on Uses of Sulfonamides: Sulfonamides in Internal Medicine. C. J. Tripoli.—p. 455.
Sulfonamides in Surgery. I. Cohn.—p. 461.
Sulfonamides in Urology. W. A. Read.—p. 465.
Sulfonamides in Gynecology and Obstetrics. C. H. Tyrone.—p. 466.
Sulfonamides in Otolaryngology. W. A. Wagner.—p. 468.

North Carolina Medical Journal, Winston-Salem

5:121-172 (April) 1944

Cancer Control Movement. J. B. Murphy.—p. 121.
*Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet. W. Kempner.—p. 125.
Experimental Comparison of Certain "Skin Sterilizing" Agents: Preliminary Report. T. C. Bost.—p. 133.
*Sulfonamides in Treatment of Acute Hemorrhagic Nephritis. J. F. Crumpler.—p. 140.
Thumbnail Sketches of Eminent Physicians: IV. Paracelsus the Iconoclast (1493-1541). J. C. Trent.—p. 142.

Rice Diet in Renal and Vascular Disease.—Kempner used a dietary regimen consisting of rice, sugar, fruit and fruit juices supplemented by vitamins and iron during the past four years in patients with acute and chronic glomerulonephritis and hypertensive vascular disease. The diet contains in 2,000 calories from 15 to 25 Gm. of protein, 4 to 6 Gm. of fat, 460 to 470 Gm. of carbohydrate, 0.25 to 0.4 Gm. of sodium and 0.1 to 0.15 Gm. of chloride. The amount of fruit juices given daily is usually 700 to 1,000 cc. The diet proved to be beneficial in the majority of the 140 patients who followed this regimen for periods ranging from four days to thirty months in the hospital and at home. In no instance has the diet proved harmful. Careful medical supervision, including studies of blood and urine chemistry, is essential. The histories of 2 patients, 1 with chronic glomerulonephritis, the other with hypertensive cardiovascular disease, are given to illustrate the effects which a rice-fruit-sugar diet may have on hypertension, heart enlargement, electrocardiographic changes, edema, hypoproteinemia, nonprotein nitrogen, hypercholesteremia, albuminuria and retinopathy.

Sulfonamides in Acute Hemorrhagic Nephritis.—According to Crumpler acute hemorrhagic nephritis is a common disease of infants and children following measles, scarlet fever, skin infections and particularly streptococcic infections of the upper respiratory tract. The hemolytic streptococcus causes most cases of hemorrhagic nephritis; however, Streptococcus viridans, the pneumococcus or the gonococcus may occasionally be the invading organism. The onset is gradual. The symptoms are suppression of urine, elevation of blood pressure, nausea, vomiting, edema, confusion and convulsions. Urinalysis shows albumin, red blood cells, white blood cells, casts and decreased urinary function. There is elevation of the nonprotein nitrogen and the blood urea. Since most cases of acute hemorrhagic nephritis are caused by the hemolytic streptococcus the sulfonamides are indicated in their treatment, along with surgical removal of foci of infection when these exist. Sulfanilamide is probably the drug of choice, since it is less likely to crystallize in the urinary tract. The drug is given in relatively small doses, which should be continued until a complete cure is established. Sulfanilamide should be given before and after surgery to prevent an exacerbation or recurrence of the acute nephritis. The author reviews observations in 17 cases of acute hemorrhagic nephritis which have been treated with sulfonamides in the Park View Hospital and at his office with favorable results. There was no evidence of kidney damage in any case.

Public Health Reports, Washington, D. C.

59:449-484 (April 7) 1944

Nomenclature of Pneumococcic Types. Bernice F. Eddy.—p. 449.
Study of Cross Reactions Among Pneumococcic Types and Their Application to Identification of Types. Bernice E. Eddy.—p. 451.

59:485-512 (April 14) 1944

Cross Reactions Between Several Pneumococcic Types and Their Significance in Preparation of Polyvalent Antiserum. Bernice E. Eddy.—p. 485.

South Carolina Medical Assn. Journal, Florence

40:53-72 (March) 1944

Rheumatic Fever. A. W. Browning.—p. 55.
Missed Abortion. R. F. Zeigler Jr.—p. 57.
History of Anesthetic Drugs. R. P. Walton.—p. 60.

40:73-90 (April) 1944

Reconstruction of Lower Jaw: Case Report. A. T. Moore and W. C. Cook.—p. 73.
Vitamin A and Color Vision. J. A. Richardson and F. W. Kinard.—p. 76.
Pollen Counts, 1941-1943—Columbia, S. C. Katharine Baylis MacInnis.—p. 77.

Surgery, St. Louis

15:521-680 (April) 1944

*Use of Plasma for Filling Pleural Space After Loss of Varying Amounts of Lung. W. E. Adams and T. F. Thornton.—p. 521.
Management of Burns. F. E. Walton.—p. 547.
Secondary Carcinoma of Mandible: Analysis of 71 Cases. R. E. Buirge.—p. 553.
Jejunostomy for Decompression of Postoperative Stomach. A. W. Allen and G. Donaldson.—p. 565.
Perforation of Postoperative Jejunal Ulcers. K. W. Warren and L. S. Fallis.—p. 569.
New Portable Suction Apparatus for Use with Miller-Abbott Tube. J. A. Gius and C. A. Racely.—p. 574.
Multiple Primary Carcinomas of Gastrointestinal Tract. W. I. Sheinfeld and I. Rudolph.—p. 579.
Bilateral Oophorectomy with Radical Operation for Cancer of Breast. J. S. Horsley.—p. 590.
Internal Fixation of Fractures of Patella with Cotton Suture Material. L. K. Loomis.—p. 602.
Experimental Head Injury Produced by Blasting Caps. S. R. Govons.—p. 606.
Case of Infection with Clostridium Sordellii and Case of Gas Gangrene Treated by Penicillin. H. D. Harvey and F. L. Meleney.—p. 622.
Subparietal Rupture of Intestine Due to Muscular Effort: Case Report. F. Christopher.—p. 628.
Accessory Operating Table for Oral Surgery on Infants and Children. B. Goldman.—p. 630.
Aseptic Appendectomy—Application of Parker-Kerr Suture to Appendical Stump. F. P. Shidler.—p. 634.
Lesions of Terminal Colon Associated with Urinary Disturbances. J. A. Lazarus.—p. 637.
*New Technic for Repair of Facial Paralysis with Tantalum Wire. W. W. Schuessler.—p. 646.
Association of Thrombophlebitis with Hematogenous Bone Infection. A. O. Wilensky.—p. 653.
Simple Technic for Multiple Venipunctures. C. M. Rhode.—p. 654.

Plasma for Filling Pleural Space After Loss of Lung Tissue.—Adams and Thornton show that alteration of the blood, in the resection of various amounts of lung tissue, may be considerable. Factors not encountered in operations on other organs may contribute to this alteration, namely (1) the incision is long and usually divides heavy bellied muscles transversely, (2) vascular adhesions are frequently encountered and (3) the amount of blood within the lung may be considerable. Following these operations both cells and plasma of the circulating blood are lost, part of this being drained away (as much as 600 to 1,200 cc. following lobectomy) or allowed to accumulate in the pleural space (as in pneumonectomy). The postoperative course of a patient would be less complicated if a more nearly normal blood picture was maintained. Since resection of the lung is at present frequently indicated for malignancy, bronchiectasis, lung abscess, and tuberculosis, the factor of blood protein replacement assumes greater importance. To determine the method of choice for replacement of protein loss, the authors investigated in animal experiments not only the various causes of blood plasma protein fall but also the replacement therapy. They found that following resection of lung tissue in dogs blood plasma protein levels were reduced by 33⅓ per cent. This reduction persists for as long as ten days. The removal of lung tissue, the thoracotomy wound, anesthesia and infection are all contributing factors to the fall in plasma proteins. Replacement therapy consisted in the administration of blood or serum intravenously or serum intrapleurally. Both replacement materials and routes of administration were equally effective when the materials were given in adequate amounts.

Repair of Facial Paralysis with Tantalum Wire.—White suggested the use of tantalum wire for repair of facial paralysis. Schuessler describes the tantalum wire method as used at the Walter Reed General Hospital. The method is simple and effective, and it stabilizes the mouth, the lower end of the nose, and the eyelids, thereby transmitting some elements of expression to the paralyzed side. The operation is performed under local anesthesia. No disability or bed rest is necessary, as no incision is made for the removal of fascia from the thigh. When the wires are in position the patient can sit up and the wires can be tightened to the proper tension, thereby doing away with the amount of sagging in the paralyzed side which occurs when the patient is lying down. There is no swelling or hemorrhage in the tissues of the paralyzed side because of the very slight trauma which is produced by the small caliber of the needle. This method can also be used to hold muscles in balance during the time the nerve is regenerating, and when fully recovered the wires can be removed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

17:33-64 (Feb.) 1944

Enquiry into Causation and Characteristics of Cephalhematomata. J. B. Hartley and C. W. F. Burnett.—p. 33.
Regression of Tumors Following Treatment by Stilbestrol and X-Ray Therapy, with Notes on Case of Breast Tumor Which Regressed with Stilbestrol Alone. G. G. Binnie.—p. 42.
Dosage System for Linea Gamma Ray Sources. D. E. A. Jones.—p. 46.
X-Ray Appearances in Amebic Hepatitis. J. Munk.—p. 48.
Nature and Functions of Intervertebral Disks. F. Roberts.—p. 54.
Cholecystography: Pheniodol as Medium for Graham-Cole Test. G. T. Calthrop.—p. 60.
Focal Osteitis Fibrosa of Skull: Case Record. J. A. Brocklebank. —p. 62.

17:65-100 (March) 1944

"The Eye and Radiology," a Symposium. J. F. Bromley, W. D. Wright and G. Spiegler.—p. 65.
Pneumoroentgenography of Knee Joint. P. P. Hauch.—p. 70.
Production of Isodose Curves and Calculation of Energy Absorption from Standard Depth Dose Data. W. J. Meredith and G. J. Neary. —p. 75.
Venography in Primary Axillary Vein Thrombosis: Case Report. E. Samuel.—p. 83.
Some Condenser Ionization Chambers for Measurement of X-Ray Dose. C. W. Wilson.—p. 86.
Use of Wedge Filters in Deep X-Ray Therapy. F. Ellis and H. Miller. —p. 90.
Bone Degeneration in Temporomandibular Joint: Case Report. J. W. McLaren.—p. 94.
Medical Uses of Radium: Summary of Reports from Experimental Research Centers for 1942. Medical Research Council.—p. 96.

British Journal of Surgery, Bristol

31:205-312 (Jan.) 1944

Anglo-American-Canadian Surgical Mission to Russia, July 1943. G. Gordon-Taylor.—p. 205.
Military Surgery in "Middle East." A. E. Porritt.—p. 208.
Compound Fronto-Orbital Fractures: 8 Cases. J. Schorstein.—p. 221.
Recurrent Hernia: Investigation of Causes of Recurrence and Application of Principles of Treatment of Primary Lesion. W. Patrick. —p. 231.
Case of Cerebrospinal Fever with Thrombosis of Right Axillary Artery, Followed by Gangrene of Right Arm, Necessitating Amputation. A. Levin and D. M. McElroy.—p. 240.
Humeroradial Synostosis. E. Frankel.—p. 242.
*Spinal Anesthesia in Treatment of Hirschsprung's Disease: With Reports of 12 Cases. Margaret Hawksley.—p. 245.
Fractures and Dislocations of Cervical Spine. F. Crooks and A. N. Birkett.—p. 252.
Severe Intestinal Hemorrhage Due to Myomatous Tumor of Jejunum, with Note on Bleeding Myomata of Small Intestine. G. Gordon-Taylor.—p. 266.
Multiple Cavernous Hemangiomas of Lungs Successfully Treated by Local Resection of Tumors. R. M. Janes.—p. 270.
Congenital Dislocation of Shoulder. G. Flavell.—p. 272.
Mesenteric Defects. E. G. Dolton.—p. 275.
Fractures of Triquetrum. J. G. Bonnin and W. P. Greening.—p. 278.
Ureteral Stricture with Perinephric Urinary Extravasation Caused by Metastases from Silent Carcinoma of Stomach. J. D. Fergusson. —p. 283.
Surgical Aspects of Sulfapyridine Anuria. J. M. Campbell.—p. 286.
Postoperative Respiratory Complications Following Unilateral Inguinal Herniorrhaphy in Wartime: Study of 438 Service Cases. B. G. B. Lucas.—p. 288.

Spinal Anesthesia in Treatment of Hirschsprung's Disease.—Hawksley reports 12 cases of Hirschsprung's disease in only 1 of which improvement did not occur. The colon and rectum are innervated by the two antagonistic halves of the autonomic nervous system, the sympathetic inhibiting colonic movements and initiating closure of the sphincters, the parasympathetic initiating intestinal movements and opening the sphincters. It is reasoned that an imbalance exists between the two halves of the autonomic system with overaction of the sympathetic, and it is suggested that by temporarily paralyzing the offending half the parasympathetic can exercise its function unchecked and that on recovery of the sympathetic the two halves are restored to normal balance. The object is to paralyze the anterior roots up to the fifth thoracic at least. Light nupercaine anesthesia 1:1,500 is used and found to be highly satisfactory. No basal premedication is given, but ephedrine is given intramuscularly just beforehand. The nupercaine, warmed to blood heat, is injected into the space between the second and third lumbar vertebrae with the child sitting up. The child remains sitting for twenty seconds and is then placed on its back in the reversed Trendelenburg position, i. e. shoulders highest; this ensures that the bulk of the nupercaine will affect the anterior roots and will continue to travel upward. This position is usually maintained for five minutes, or until the child complains of pins and needles in its hands. The table is then tilted, bringing the shoulders downward, thus ensuring that the nupercaine will not continue to ascend. On the basis of observations in 12 cases, the author takes a hopeful view of the effect of spinal anesthesia in Hirschsprung's disease.

British Journal of Venereal Diseases, London

20:1-46 (March) 1944. **Partial Index**

Drug Resistance in Gonorrhea. A. H. Harkness.—p. 2.
Is New Deal in Control of Venereal Disease Necessary?—1. I. N. O. Price.—p. 19.
Sulfamezathine in Gonorrhea in Male. A. G. Johnson.—p. 31.
Acute Encephalopathy During Neoarsphenamine Treatment: Report on 6 Cases. W. A. Young and S. Gordon.—p. 34.
*Malarial Treatment in Earlier Stages of Neurosyphilis. F. G. Lescher and H. R. M. Richards.—p. 37.

Malarial Treatment in Early Neurosyphilis.—According to Lescher and Richards, malarial treatment for the earlier forms of neurosyphilis, before the onset of dementia paralytica, has not been extensively employed in Britain. The fact that there is a mortality rate of from 2 to 10 per cent associated with the malarial treatment of neurosyphilis may be responsible for the lack of enthusiasm. These figures have been estimated from results obtained in patients with dementia paralytica, which is a fatal disease. It was reasonable to suppose that if patients were treated with malarial fever before the onset of dementia paralytica the mortality rate should be much less than the figures quoted. The authors used malarial therapy in 20 cases of neurosyphilis before the onset of dementia paralytica. Care was taken that the patients were well nourished and were not suffering from infective or debilitating disease. Patients with gross infection of the bladder or in whom there was evidence of damage to the cardiovascular, renal or hepatic systems were excluded. The authors employed injection of malarial blood for the transmission of malaria. The highest temperature rarely exceeded 105 F. There was no difficulty in terminating the malarial infection. The patients were examined periodically after leaving the hospital. Further chemical treatment has been given when necessary. After combined malarial and chemical treatment clinical improvement has taken place and has been maintained in 15 cases together with improvement in the condition of the cerebrospinal fluid and in the blood serum reactions. The authors suggest that malarial therapy has a place in the treatment of selected patients with the earlier forms of neurosyphilis and that venereal disease clinics should be affiliated with hospitals where facilities for this treatment are available.

British Medical Journal, London

1:383-412 (March 18) 1944

Hygiene Aspects of El Alamein Victory, 1942. H. S. Gear.—p. 383.
Study of Selected Group of Women Employed on Extremely Fine Work. Ida Mann and Dorothy Archibald.—p. 387.
Action of Electric Blankets. G. M. Brown and K. Mendelssohn. —p. 390.
Acute Nicotinic Acid Deficiency (Aniacinosis). B. Gottlieb.—p. 392.
Chest Screening in Antenatal Clinic. Rachel Frank and A. L. Jacobs. —p. 394.

1:413-446 (March 25) 1944

Somatic Manifestations of Psychoneurosis. I. Douglas-Wilson.—p. 413.
Lung Abscess in Relation to Influenza Epidemic. E. Davis.—p. 416.
*Prognostic Value of Laboratory Investigations in Typhoid Fever. S. S. Bhatnagar.—p. 417.
Treatment of Ocular Infections with Penicillin. G. T. W. Cashell. —p. 420.
Control of Very Severe Diabetes by New Arrangement of Insulins. R. D. Lawrence and W. Oakley.—p. 422.

Prognostic Value of Laboratory Investigations in Typhoid.—According to Bhatnagar, laboratory investigations in typhoid are usually employed for the confirmation of clinical diagnosis, either directly by the isolation of the infecting organism from blood, urine or feces, or indirectly by the estimation of antibody production, chiefly Vi and O agglutinins. In military hospitals in India blood cultures in the early stages, agglutinations throughout the course of infection and collection of evidence for the excretion of micro-organisms, even during con-

valescence, comprise the routine procedure. Not only was it thus possible to gain an insight into the struggle between host and parasite, but specific antityphoid serum therapy could also be placed on a more satisfactory basis. Prognostic inferences were drawn from a study of 280 cases of typhoid in which laboratory investigations were carried out throughout the course of infection. The cases were divided into six groups: (1) the simple type, which presents the textbook description of the disease, (2) the ambulatory type, (3) the toxic type, (4) the form with prolonged pyrexia, (5) the embolic type and (6) the relapse type. A close association existed between the prognostic outlook and the results of laboratory investigations. It was found that if Vi antibody was present early in a sufficiently high titer (50 to 250) and this titer was maintained over a number of days the course would most likely be short (simple type). In the embolic type, in which the Vi antibody was either absent or seldom above 10 to 20, improvement was preceded by a rise in Vi titer. The prolonged pyrexia type resolved only when a sustained Vi titer was recorded. In the case of remittent fever, absence of Vi antibody or the lack of an appropriate rise in O agglutinins does not exclude the possibility of typhoid. An abnormal rise in O agglutinins was observed in the toxic type, the titer varying from 2,000 to 20,000. Since a considerable fall in the O titer of serum always preceded recovery, the high rise of O agglutinins must be regarded as pathologic. In the ambulatory type complete rest and noninterference with the rise in temperature appear to be of the greatest importance in the second stage of the disease. Relapses occurred in 6 per cent of the series. Unusual laboratory findings appeared to be associated with the possibility of relapse. An early rise in Vi agglutinins should be expected only in mild cases.

Edinburgh Medical Journal

51:65-112 (Feb.) 1944

Koilonychia and Polycythemia Vera. A. J. Glazebrook.—p. 65.
*Symptomatic Hemolytic Anemia: Report of 4 Cases. L. J. Davis.—p. 70.
Liver Function in Health and Disease. O. A. Trowell.—p. 84.
Tubercle Bacilluria in Child. W. T. Munro.—p. 101.

Symptomatic Hemolytic Anemia.—Davis reports 4 cases of symptomatic hemolytic anemia. The underlying pathologic conditions were respectively carcinoma of the tail of the pancreas, reticulosis or Hodgkin's disease (2 cases) and subleukemic myeloid leukemia. Acceptance of the diagnosis of symptomatic hemolytic anemia depends on evidence that the anemia is of hemolytic origin and that its onset was preceded by the underlying primary pathologic condition. The recognition of excessive red cell destruction in patients suffering from neoplastic and allied conditions may present difficulties. The least equivocal of these criteria are the demonstration of excessive excretion of fecal urobilinogen, and in cases in which the hemolysis is intravascular the demonstration of methemalbuminemia or hemoglobinuria. The mechanism of hemolysis is obscure in symptomatic hemolytic anemia and may vary according to the nature of the primary pathologic process, as do also the prognosis and treatment. The author has no knowledge of whether hemolytic anemia has been observed in cases of carcinomatous growths which were subsequently successfully extirpated or in cases of leukemia which proved amenable to radiation therapy. In 1 of the reported cases the hemolytic process subsided following the institution of radiation therapy directed against the underlying condition of reticulosis.

Lancet, London

1:329-360 (March 11) 1944

Psychologic Medicine: Current Methods of Treatment. I. Skottowe.—p. 329.
Liver Function After Burns in Childhood: Changes in Levulose Tolerance. S. L. Rae and A. W. Wilkinson.—p. 332.
Agranulocytosis and Aplastic Anemia After Arsphenamines: Report of 6 Cases. J. W. Ferguson.—p. 334.
*Sliding Graft for Ununited Fracture of Tibia. B. H. Burns and L. S. Michaelis.—p. 337.
Trypanosomiasis Treated with Pentamidine: Fatal Case. G. McComas and N. H. Martin.—p. 338.

Sliding Graft for Ununited Fracture of Tibia.—Burns and Michaelis state that the sliding graft with metal fixation is not as popular as it deserves to be. The sliding graft has been their standard method and has given satisfactory results in all but 1 of the 26 consecutive cases in which it has been used since June 1940. The use of the sliding graft is particularly applicable to the tibia, for the size and shape of the bone allow a graft to be cut bulky enough for its purpose, while incision and exposure of the bone presents no difficulties or disadvantages. A long skin incision is made about ½ inch lateral to the anterior border of the tibia. It is curved inward at each end. The periosteum is stripped from the subcutaneous surface, a 5 to 6 inch graft is cut in the bone above the level of the fracture and half that length of bone is removed from the subcutaneous surface below the fracture. The graft can be slid down as far as necessary. When the fracture is near the upper end of the tibia it is necessary to slide the graft from below upward. After the graft has been fitted it is fixed by the insertion of four to six vitallium screws. In no instance was the shortening more than ¾ inch. The sliding graft is not suitable for gaps larger than this. In infected cases operation was not done until at least three months after the cessation of discharge. Of the 26 fractures in this series 21 were united in three to four months, 3 at five months and 1 at seven months; 1 failed to unite. The authors conclude that, of the methods of grafting for nonunion of the tibia, sliding inlay, fixed with vitallium screws, is the simplest; and it does not necessitate the borrowing of bone from the other leg.

1:361-392 (March 18) 1944

Surgery in the Field. G. Blackburn.—p. 361.
*Absorption and Excretion of Sulfonamides in Children. Margaret W. Stanier and T. Stapleton.—p. 366.
Confusional Psychoses Following Sulfaguanidine Therapy. J. W. Crofton and G. Diggle.—p. 367.
*Tobacco Smoking and Pulmonary Complications After Operation. H. J. V. Morton.—p. 368.
Extensive Burns Treated in an Open Irrigation Chamber. H. M. Goldberg.—p. 371.
Unusual Case of Chronic Meningococcal Bacteremia, with Note on Nomenclature. L. Martin and B. Dansie.—p. 372.

Absorption and Excretion of Sulfonamides in Children.—It has been suggested that a drug which is only poorly absorbed from the lumen of the intestine would be more effective than one which is well absorbed, because there would be a higher concentration of the drug in the feces. The medical research council recommended sulfaguanidine and succinylsulfathiazole for the treatment of intestinal infections because only 25 to 50 per cent of the former and about 5 per cent of the latter were stated to be absorbed. Paulley found that sulfapyridine had advantages over sulfaguanidine, suggesting that it is not the concentration of the drug in the intestinal contents but the concentration in the blood which is the important factor. During an outbreak of Sonne dysentery in a children's ward, Stanier and Stapleton attempted to control the epidemic by giving each child a forty-eight hour course of either sulfaguanidine or succinylsulfathiazole. They used the urinary excretion as a means of comparing the various amounts of the different drugs absorbed. They found that approximately equal proportions of sulfathiazole and sulfaguanidine are excreted in the urine after the administration of similar doses of the drugs. Only a small proportion of succinylsulfathiazole is excreted in the urine. The blood levels obtained with sulfathiazole are slightly higher than those obtained with sulfaguanidine: this may be partly because sulfathiazole is excreted slightly more slowly than sulfaguanidine. In the light of these observations it might be expected that succinylsulfathiazole is of most value as a prophylactic against bacillary dysentery, but possibly not to be as effective as either sulfathiazole or sulfaguanidine in the treatment of established cases. When using either sulfathiazole or sulfaguanidine it is important to ensure an adequate urinary output, and with sulfathiazole the urine should be kept alkaline.

Tobacco Smoking and Pulmonary Complications After Operation.—Morton investigated the incidence of bronchitis, atelectasis and bronchopneumonia after abdominal operations and "gas-oxygen-ether" in 1,257 adults. The use of omnopon-scopolamine, a mild respiratory depressant, for premedication was associated with a slight but not significant increase in pulmonary complications, as compared with the use of atropine alone, which has no depressant effect. The combined figures for all types of abdominal operations show that the morbidity rate for smokers taking more than ten cigarets a day is about

six times that for nonsmokers. Smokers are more likely to develop complications associated with serious constitutional disturbance. The sex incidence ratio of pulmonary complications is explained. When abdominal operations are contemplated, it is advisable for smokers to stop or reduce their smoking as a precaution against pulmonary complications.

1:393-424 (March 25) 1944

*Corneal Vascularization in Nutritional Deficiency. T. K. Lyle, T. F. Macrae and P. A. Gardiner.—p. 393.
Anesthesia in Fractures of Jaws. R. P. W. Shackleton.—p. 396.
*Necrobacillosis in Man. G. B. Forbes and J. C. Goligher.—p. 399.
Pathogenesis of Sulfonamide Neutropenia. R. G. Park.—p. 401.

Corneal Vascularization in Nutritional Deficiency.—Many students of nutrition regard corneal vascularization as a specific sign of riboflavin deficiency. The relationship between corneal vascularization and nutritional status in Royal Air Force personnel has been investigated in the past two years in twenty-two localities. In some localities the standard of feeding was good, while in others it was less satisfactory either because of lack of local supplies or because importation of some desirable foodstuffs was impossible. Nearly 4,000 subjects have been examined, and at some stations the effects of supplementing the diet have been studied. Many of the men who had excellent dietaries had blood vessels on the cornea, and subjects with much corneal vascularity did not always improve when the diet was supplemented. Vascularity of the cornea is apparently not necessarily an evidence of deficiency in the diet. On the other hand, there was little corneal vascularity where the food was good and more where food was less satisfactory. The average degree of corneal vascularity in a group of subjects is therefore a reliable index of their general state of nutrition. Riboflavin is not the only nutrient concerned in the prevention of corneal vascularization. These experiments suggest that other factors present in fruits and vegetables influence this condition more than riboflavin.

Necrobacillosis in Man.—According to Forbes and Goligher the term necrobacillosis covers a wide variety of animal diseases due to infection with a gram negative nonsporing filamentous anaerobe. An organism of this description has been recovered from the caseonecrotic lesions of equine bacillary necrosis, calf diphtheria, "foot rot" in sheep and pigs, labial necrosis in rabbits and hepatic necrosis in cattle. In all of these the basic pathologic process is the same: there is a local lesion with a tendency to necrosis, and often metastatic abscesses develop in lungs and liver. The taxonomic position of the causative organism has not been definitely established, and it is known by many names. The authors prefer the term Bacterium necrophorum. The organism rarely attacks human beings. Although it has been recovered from the healthy human colon and also from the colon in ulcerative colitis, few cases are on record in which it has been clearly pathogenic to man. The authors report that a man aged 24 sustained an open fracture of the leg and various minor wounds during a naval engagement. After a month the fracture wound was still heavily infected, and signs of septicemia developed. Chemotherapy was ineffective, and the leg was amputated. Aerobic blood culture was negative, but a gram negative filamentous organism resembling Bact. necrophorum was isolated from pyemic abscesses and was later grown anaerobically from the blood. On the patient's death, after nearly twelve weeks' illness, multiple pyemic abscesses were found in the lungs and under the skin. The source of infection in the case recorded is a matter for conjecture. At no time during the history of the wound was the patient exposed to an obvious extraneous source of infection. He was on a destroyer at sea when the wound was received.

Medical Journal of Australia, Sydney

1:165-188 (Feb. 26) 1944

Wheat, Flour and Bread, with Special Reference to Enriched Flour. R. A. Bottomley.—p. 165.
Seminal Vesiculitis. W. J. Close.—p. 170.

1:189-212 (March 4) 1944

Treatment of Malaria. E. T. Brennan.—p. 189.
Treatment of Compound Fractures of Femur in Battle Casualties at General Hospital. E. F. West.—p. 193.
Abdominal Diagnosis. A. E. Lee.—p. 196.

Praxis, Bern

32:611-626 (Aug. 26) 1943

*Prophylaxis Against Typhoid, Paratyphoid and Dysentery: Measures to Be Taken with Carriers. R. Regamey.—p. 611.
Doctor's First Aid Kit. E. A. Hafner.—p. 616.
Diagnosis and Therapy of Otitis Media. L. Rüedi.—p. 617.

Measures to Be Taken Against Typhoid Carriers.—Regamey discusses measures to be taken against typhoid carriers with consideration of the conditions existing in Switzerland. He recommends the creation of an office of control of carriers by the cantonal authorities. Two types of carriers are difficult to detect: these are (1) the mildly infected, in whom the disease takes an atypical course and who may not come under the care of a physician, and (2) the healthy carriers without previous symptoms. The author maintains that there is invariably a carrier of germs at the basis of all typhoid, paratyphoid and dysentery cases. Every new infection must be made the object of an investigation until the responsible carrier is detected. The Gruber-Widal reaction gives uncertain results. The search for Vi antibodies in the serum is more fruitful; the author found it particularly useful in the examination of large groups (asylums). There is no treatment that can be recommended to the carrier with certainty of success. The author mentions the use of arsphenamine, vaccines, phages, chemotherapy with sulfonamides, acriflavine hydrochloride, magnesium sulfate, zinc sulfate and others. The parasites may disappear spontaneously. Carriers whose occupation involves contact with foods must change their occupation. If this entails financial loss, the office of control should see to it that suitable indemnity is granted. This office should also punish infractions which endanger public health. Other tasks of the office of control are the education and bacteriologic control of the carrier and the hygienic supervision of persons in the environment of the carrier.

Revista de la Asoc. Méd. Argentina, Buenos Aires

57:925-980 (Nov. 15) 1943. **Partial Index**

*Tumors of Cauda Equina: Clinical Diagnosis from Untractable Sciatica and Operation. J. Diez.—p. 925.
Fatal Pulmonary Hydatid Embolism Due to Rupture of Multivesicular Cyst of Liver. O. A. Itoiz, A. Marano and R. F. Matera.—p. 933.
Cirrhosis and Hydatic Cyst of Liver. A. Marano and R. I. Latienda.—p. 960.
Therapy of Open Fracture: Advantages of Immobilization. A. Bonadeo Ayrolo.—p. 961.

Tumors of Cauda Equina.—Diez discusses the importance of unilateral or bilateral, intractable sciatica for an early diagnosis and early successful operation on tumors of the cauda equina. Pain, as the only symptom, may begin suddenly, disappear for a long time and reappear with a progressive intractable course or it may be progressive and intractable from the beginning. The differential diagnosis of sciatica caused by tumor from rheumatic and arthritic sciatica and sciatica caused by protrusion of the intervertebral disk or by hypertrophy of the ligamentum flavum is made by the chemical examination of the cerebrospinal fluid, by manometric determination and roentgenogram examination of the spine after subarachnoidal injection of iodized poppyseed oil.

Semana Médica, Buenos Aires

51:49-96 (Jan. 13) 1944. **Partial Index**

*Pulmonary Embolism Complicating Puerperal Thrombophlebitis. R. Dubrovsky and E. A. Linzoain.—p. 64.
Traumatic Rupture of Spleen. C. A. Castro.—p. 66.

Pulmonary Embolism Complicating Puerperal Thrombophlebitis.—Dubrovsky and Linzoain classify pulmonary embolism complicating puerperal thrombophlebitis into (1) hyperacute, (2) acute, (3) subacute and (4) moderate. In treatment of the last three types they employ intravenous injections of papaverine. A solution containing 0.03 Gm. of papaverine hydrochloride per cubic centimeter is slowly injected. From 2 to 7 cc. of this solution is administered to persons with the acute and subacute types and half that dose to persons with the moderate type. An intramuscular injection of from 0.01 to 0.015 Gm. of morphine hydrochloride is administered before or immediately after injection of the papaverine to persons with the acute type and half the dose to persons with the subacute type. These injections can be repeated if necessary.

Book Notices

Medical Physics. Editor-In-Chief: Otto Glasser, Ph.D., Head, Department of Biophysics, Cleveland Clinic Foundation, Cleveland. Buckram. Price, $18. Pp. 1,744, with illustrations. Chicago: Year Book Publishers, Inc., 1944.

Although some of the earliest investigators in the field of medicine were physicists, physical agents were not used extensively for therapeutic and diagnostic purposes until recently. This volume covers briefly many applications of the physical principles used in various branches of medicine. The book is well illustrated and is carefully edited. Each chapter contains an extensive list of references covering the sources of material for the chapter or giving reference for additional reading matter. The classified table of contents contains sections on anatomy, bacteriology, biometrics, biophysics, dermatology, hematology, medicine, neurology, nuclear physics, ophthalmology, optics, orthopedics, otolaryngology, pathology, pediatrics, photography, physical chemistry, physical therapy, physics (instruments and methods), physiology, radiology, surgery and urology. In each of these categories the part played by physics is considered. Both diagnostic and therapeutic devices are given careful attention, and all applications of physics in medicine are dealt with adequately. One does not have to be a mathematician to derive useful information from the book. Mathematics is used, but the mathematical formulas are accompanied by word descriptions. There are ample diagrams, charts and tables to bring out the importance of the subject matter at hand. In short, the book presents the elements of physics effectively for specialists practicing physical medicine and radiology and serves as an adequate reference handbook for the physician in other fields.

Persistence and Change in Personality Patterns. By Katherine Elliott Roberts and Virginia Van Dyne Fleming. Monographs of the Society for Research in Child Development, Volume VIII, No. 3 (Serial No. 36). Paper. Price, $1.50. Pp. 206, with 25 illustrations. Washington, D. C.: Society for Research in Child Development, National Research Council, 1943.

This monograph attempts to answer the question "Are human traits fixed, or are they modified by life experiences?" The material dealt with consists of the life histories of 25 women interviewed in the Advisory Service for College Women of the Merrill-Palmer School in Detroit. Part I presents three of these histories (original "average length 90,608 words") in condensed novelette form, but, possibly because the authors themselves did not do the interviewing, the published anamneses show little insight into the nuances of individual and social development of their subjects. Substituted are the usual clichés about "feelings of inferiority," "difficult relationships," "emotional outlets" and other phrases used as secondary evaluations of the original biographic data. From such histories, nevertheless, various "traits" such as "shyness" and "strong ego drive" are then further abstracted, coded, tabulated and analyzed for the factor of "persistence," which admittedly varied from case to case. Despite the methodologic tenuousness of such procedures, the authors then construct tables to show that traits such as "seeks help when needed" rate only 11 per cent persistent, whereas "has a few friends in whom she confides" is 100 per cent constant, presumably up to the time the subject confided in the interviewer. The authors conclude that "there seems to be a nuclear personality pattern for every individual . . . and around this nucleus other traits and attitudes shift as life proceeds . . . even the nuclear pattern may change when conditions are changed radically." To answer the subsidiary question "Do homes matter?" the authors classify their subjects into those from "happy" homes (5) "unhappy" homes (4) and "medium" (16), according to criteria like "gets along with parents" vs. "thinks mother considers doing things for children too much trouble." The authors conclude, again somewhat predictably, that homes matter.

Similar revelations by tabular divination are then related to chapter headings such as "Is Personality Related to Marital Happiness?" "Personality and Religious Values" and "Social Adjustment and Personality." There is a fifty-six page appendix of tabular data without specific or implied qualifications to the effect that these "data" really represent the authors' abstracted opinions of the interviewers' recorded opinions of the subjects' expressed opinions of themselves. Characteristic also is the inclusion of several elementary textbooks and three dictionaries in the bibliography of twenty-nine titles, with almost no reference to the rich literature of psychoanalytically and clinically oriented studies in the field.

The main defects of this monograph are those of the traditional academic approach to personality: methodologic devotions to questionnaire "tests," the tabulation of "traits" or other vague generalities and the statistical derivation of the same pedantries that were originally injected into the material. Despite the undoubted sincerity of its composition, therefore, this monograph is recommended only as a documentary case study of a rapidly passing preoccupation with the trite and the sterile in our concepts of personality.

The American Illustrated Medical Dictionary: A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, Etc., with the Pronunciation, Derivation, and Definition. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Lieut.-Colonel, M. R. C., U. S. Army. With the collaboration of E. C. L. Miller, M.D., Medical College of Virginia. Twentieth edition. Fabrikoid. Price, $7; Thumb indexed, $7.50. Pp. 1,668, with 885 illustrations. Philadelphia & London: W. B. Saunders Company, 1944.

This is a complete revision of this dictionary, involving changes on every page. Many hundreds of new words have been added, including all of the new fields at present associated with medicine, such as mycology, and all of the new technics that have been developed in recent years. Especially important as a feature of this edition is the incorporation of the terminology of the Standard Nomenclature of Diseases and Operations. The definitions in each instance and the descriptions of operations appear under the terms preferred by the Standard Nomenclature. This volume, as is apparent from its preface, represents today an effort in which many of the leading institutions devoted to medical education and medical publication of the United States cooperate. Thus the assistance is recorded of the editorial staff of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the editorial staff of the Mayo Clinic and the staffs of the libraries of the New York Academy of Medicine and of the College of Physicians of Philadelphia. Furthermore, a number of individuals have cooperated by submitting some new terms much used in medicine. The present edition contains almost 1,700 pages, almost a thousand illustrations and great numbers of useful tables, including finally a complete dosage table.

Synopsis of Diseases of the Heart and Arteries. By George R. Herrmann, M.S., M.D., Ph.D., Professor of Medicine, University of Texas, Galveston. Third edition. Fabrikoid. Price, $5. Pp. 516, with 107 illustrations. St. Louis: C. V. Mosby Company, 1944.

The appearance of a third edition of this excellent synopsis is welcome. The contents have been considerably revised and brought up to date, with emphasis on the problems arising from the war. The order of the chapters has been shifted, and four new chapters have been added on nervous disorders with cardiac manifestations, blood pressure abnormalities, essential hypertension and general systemic types of heart disease. The new arrangement and the new chapters have greatly improved the book. The reader for whom this volume is intended will derive great benefit from its perusal, but the reviewer believes that there is undue repetition of material in several places, the avoidance of which would considerably strengthen the book. It would also permit expansion of the handling of some topics which have been pruned to barrenness, a failing common to all synopses.

The Control of Cross Infection in Hospitals. (Memorandum Prepared for the Committee on Preventive Medicine of the Medical Research Council by the Sub-Committee on Cross Infection in Hospital Wards.) Medical Research Council War Memorandum No. 11. Paper. Price, 15 cents; 6d. Pp. 34, with 6 illustrations. New York: British Information Services. London: His Majesty's Stationery Office, 1944.

The topics discussed are prevalence and consequences of cross infection, sources and modes of infection, the prevention and control of cross infection, and procedure following the occurrence of infection in a ward. Disinfection and sterilization, special rules and precautions, and a course of bacteriology for nurses are described in appendixes. There is a useful list of references. The memorandum will be helpful in the working out of efficient procedures to control cross infection in hospitals.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CONTAMINATION OF BEVERAGES AND FOOD WITH LEAD

To the Editor:—Are there any reports in the literature of lead poisoning from containers in which milk and water are boiled or other foods cooked? What is the present belief regarding the hazards of using pewter as a container for food or drinking water?

Rudolfo Perez de los Reyes, M.D., Havana, Cuba.

ANSWER.—There are many references in medical literature to widely varied sources of contamination with lead of milk and other beverages including water, as well as foods. However, reports of cases of lead poisoning are relatively infrequent and are not always substantiated by acceptable evidence. No doubt the comparative rarity of such cases is due to the fact that these contaminations are usually small, and, except in the case of certain community sources of water supply, are spotty in their occurrence and so do not result in regularly repeated exposures to hazardous dosages. Milk and many other foods take up lead from containers that are soldered on the inside and from utensils coated inside with tin-lead alloys. The use of new skillets coated thinly with tin-lead alloys is a particularly fruitful source of contamination, but their coating of tin (containing lead) tends to be melted off soon, and the remainder becomes coated with a film which reduces the contact with the food. Lead glazed containers also may contaminate food and beverages that have solvent properties. Old pewter of high lead content is generally unsatisfactory as a container for beverages, especially those of high acid content, although here too the surface becomes coated and resists solution to a considerable degree if it is not cleaned frequently with abrasives. Much of the modern pewter has a low or negligible lead content, but unfortunately one cannot always be certain that this is the case.

The important consideration in this entire problem is the regular daily dosage of lead in the food and beverages from all sources. If this is much in excess of 0.5 mg. of lead over any considerable period of time (months) in the case of adults, it constitutes a potential hazard. In the case of children the dai y dosage should be limited to a somewhat lower level. Poisoning does not occur in either adults or children from occasional ingestion of considerably larger amounts or from regular ingestion of amounts of the order of magnitude of 0.2 to 0.3 mg. a day in the food and drink.

SULFONAMIDE THERAPY AND WASSERMANN REACTION

To the Editor:—Are the sulfonamides known to cause false positives in the Kahn and Wassermann serologic tests? I have in mind several instances in which positive reactions have occurred in patients receiving sulfonamide treatment, and the positiveness seems more likely due to uncomplementary reaction than to true social diseases. I would appreciate any enlightenment you may have to offer on this point.

William A. Voke, Medical Technologist, Tucson, Ariz.

ANSWER.—The observation that sulfonamide therapy may cause positive serologic reactions for syphilis has not been recorded by others. It is known, however, that anticomplementary reactions may occur during the course of certain infectious diseases, nonsyphilitic in origin. As to the observations in question, one would like to know if tests were carried out just prior to the administration of the sulfonamides, what infectious diseases were being treated and whether the patients were quite afebrile. It is suggested that the foregoing observations should be repeated with a series of suitable control tests; that is, tests performed just prior to sulfonamide therapy, during therapy, and several days after therapy has been discontinued.

REMOVAL OF CLAMP FROM UMBILICAL CORD

To the Editor:—How long after the application of a clamp (e. g. Kane type) to the cord of the newborn can it be safely removed?

M.D., New York.

ANSWER.—It has been demonstrated that no more bleeding occurs from the cord after a clamp has been applied to it for ten minutes. However, cord clamps can be removed safely at the end of twenty-four hours.

WARTS IN CHILDREN

To the Editor:—A young girl has numerous verrucae covering her lips and the inner sides of her cheeks. She has always been in excellent health; she has had none of the childhood diseases except measles. Her Wassermann reaction is negative, blood count within normal limits and urinalysis negative. I am unable to find anything in the books on the diseases of children covering the subject and would appreciate it if you would help me out in suggestions as far as treatment is concerned. The lesions are too numerous to be treated by cautery.

M.D., North Carolina.

ANSWER.—There is no description of the type of warts which this young patient has, but if these are the usual multiple flat warts seen in children it is found that such cases will not infrequently respond to the internal administration of mercury. Yellow mercurous iodide does well, and the dosage is to be governed in general by the age. It often seems advisable to increase the dosage gradually to the point where symptoms are felt from it, such as slight cramps or diarrhea, and the dosage maintained just below the amount necessary to produce these symptoms. The urine should be watched, of course, during this time. If no result on the warts is obtained within four to six weeks, it is inadvisable to continue this medication further.

Fractional doses of radiation with a thin aluminum filter have sometimes been helpful, but the dose should be carefully calculated and the treatment given by one with satisfactory experience in this field of roentgen therapy.

ERGOTAMINE TARTRATE FOR MIGRAINE

To the Editor:—Are there any harmful effects known to develop as a result of the prolonged use of ergotamine tartrate for the relief of migraine headaches?

L. J. Alger, M.D., Grand Forks, N. D.

ANSWER.—There have been no serious ill effects reported in the literature from the prolonged administration of ergotamine tartrate taken by patients with migraine. The drug, however, must be used with caution and it is advised to give not more than 0.5 mg. subcutaneously at a time and that such a treatment should not be repeated more than three or four times a week. It is unlikely that this would be the case, for most patients with migraine do not have recurrence of their attacks more often than every four to six weeks. If ergotamine tartrate is given more frequently than needed, the patient may have signs of inadequate peripheral circulation. The various symptoms from overdosage and the complications that may ensue have been discussed by von Storch. If huge amounts of ergotamine tartrate are given at one time, death may follow. Such a case was reported by Jervis and Kindwall.

References:

Von Storch, T. J. C.: *M. Clin. North America* **25**: 1317 (Sept.) 1941.
Jervis, G. A., and Kindwall, J. A.: *Am. J. Psychiat.* **98**: 650 (March) 1942.

ALLERGY TO TREE POLLENS IN TEXAS

To the Editor:—How long will the trees in Texas which cause spring allergy be active? A man suffers acutely at present with sneezing and eye irritation.

M.D., Texas.

ANSWER.—In the San Antonio area the cedar trees start blooming early in December and continue until rather late in February. Then the other trees begin blooming and one or another is blooming until early April, by which time it is all over. There is no one tree which blooms through all this period. The elms usually begin while the cedar is still blooming; then the hackberry, oak, cottonwood and others come on almost simultaneously. With the exception of cedar which has a rather long blooming season, the pollination time of the trees is short, as a rule not more than three or four weeks. The combined tree season, however, occupies a period of about four months.

H 11 FOR CANCER

To the Editor:—A patient has brought to me a clipping from a British newspaper in which reference is made to a treatment for cancer, H 11, which has been developed at the Hosa Research Laboratories, London. Will you kindly give me any information that you may have regarding this substance?

M.D., Ohio.

ANSWER.—The clinical use of an alcoholic fraction of urine known as H 11 in the treatment of malignant tumors has been advocated by Thompson on the basis that this preparation has the property of arresting experimental tumor growth in mice. The preliminary evidence presented by this author in support of his contention is far from convincing. Moreover, the anticarcinogenic property of H 11 has not been confirmed by three different groups of investigators. Its clinical use is thus unwarranted at present.